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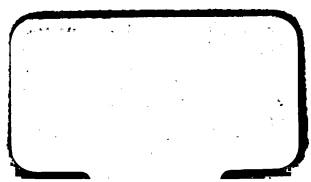

MANAGEMENT

OF THE

ORGANS OF DIGESTION.

MANAGEMENT

OF THE

ORGANS OF DIGESTION,

IN HEALTH AND IN DISEASE.

BY

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ADVERTISEMENT.

In a volume entitled "The Philosophy of Living," I have explained the principles which should guide us, as to Diet, Exercise, Sleep, Clothing, Choice of Residence, with a view to the preservation of Health. But for the same object, other rules require to be observed. These are, rules for the Management of the Stomach, when casually deranged, or during less than perfect health, and for the Regulation of the Bowels. The subject naturally includes the treatment of all the commoner Disorders of the Digestive Organs. In the following pages I have put together a series of Instructions upon these

points, intended to form a Supplement to the preceding work. And although I cannot lay claim in them to much originality, yet perhaps they will be allowed the merit of conveying, in a way intelligible to everybody, several useful cautions and suggestions, which are not so generally known and followed, as to be trite and superfluous.

H. M.

19, *George Street, Hanover Square,*
November 1*st*, 1837.

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ERRATA

Page 7, line 27, *for* second, *read* minute.
24, line 14, *for* no pain, *read* no diffused pain.
25, line 23, *for* after, *read* often.
32, line 17, *for* there, *read* then.

"THERE is a wisdom in this beyond the rules of physic: a man's own observation, what he finds good of and what he finds hurt of, is the best physic to preserve health. * * * * If you make physic too familiar, it will make no extraordinary effect when sickness cometh. I commend rather some diet for certain seasons, than frequent use of physic, except it be grown into a custom; for those diets alter the body more, and trouble it less."—BACON.

MANAGEMENT

OF

THE ORGANS OF DIGESTION,

IN HEALTH AND IN DISEASE.

Chapter I.

MANAGEMENT OF THE STOMACH.

In the first chapter of the volume, to which the present is intended to form a supplement, I have endeavoured to explain the physiology of digestion, and the nature of the changes which the food undergoes in the stomach, and to lay down the principles which should regulate the quantity, quality, and frequency of our meals at different ages, and in various states of health. The following is a summary of the observations offered on those subjects, or rather an enumeration of the principal heads of the discourse on Diet in the treatise referred to.

The process of digestion is the solution of food in the stomach through the chemical action of an acid fluid, called the gastric juice, which is poured out

by the lining membrane of the stomach, much in the same manner as the perspiration exudes upon the surface of the skin on other occasions, and for other purposes. The quantity of gastric juice, which the stomach can furnish at a single meal, depends not only on the quantity of digested food which the system is in want of to make up for previous waste, and to supply the materials of its growth, but on a great variety of other causes, which are capable, directly or indirectly, of raising or lowering the powers of digestion. In health, the appetite is the natural index and measure of the ability of the stomach to digest.

Of what we introduce into the stomach, a greater or less quantity is water, pure, or nearly so. Water, and such simple liquids as water containing a very small proportion of wine or ardent spirit, neither are digested, nor mixed up in the process of digestion, but are carried away from the stomach soon after they have been introduced into it, leaving any food which may have been taken at the same time, to be digested. The quantity of simple liquid (within certain limits, of course) taken *at a single meal* is, therefore, of little consequence, as every one knows, by experience, who has sat down to dinner thirsty from exercise. But the habitual practice of taking large quantities of liquid is, on the other hand, highly injurious; liquids fill the stomach and

bowels with wind, and lead to the production of a relaxed habit of body, causing either fat, or excessive perspirations, or both, and immoderate flow of urine. The less liquid taken daily, the firmer the flesh, the stronger the stomach, and the wholesomer the condition of the body.

Liquid combined with food as in soups and broths, taken as a meal, is commonly not easy of digestion, or the gastric juice finds a difficulty in getting at and acting upon the food in this state of mixture. But this holds in health only, and during illness the rule is often reversed.

The uses of liquid, as part of our diet in health, are, first to make up for the waste occasioned by excessive perspirations, or alvine discharges; secondly, to form vehicles, by which different stimulants and restoratives may be introduced into the system, such as tea, coffee, and the like, that contribute to our health or comfort.

That which constitutes our food, if for a single meal, must possess *one quality*; if for a succession of meals, it must combine *three*.

The food for a single meal must be *digestible*; for a succession of meals, *digestible*, *nutritious*, *stimulant*.

The essence of *digestibleness* is, that the gastric juice should easily penetrate and act upon the food. The food may resist the action of the gastric juice either mechanically or chemically; tough hard

meat, especially if swallowed in unchewed morsels, exemplifies the first source of indigestibleness, so likewise oily food, and broths and soups. The flesh of young animals, of pork, of duck, and other rich meats, is refractory in the second way.

Different sorts of food are *nutritious* in very different degrees. The flesh of adult warm-blooded quadrupeds furnishes most nutriment; next that of birds, game more than poultry: then the best farinaceous food, arrowroot, wheaten bread, &c., then fish; finally, inferior farinaceous food, and esculent and mucilaginous vegetables and fruits.

Food must have a *stimulating* quality. If animals are fed on any one kind of concentrated food exclusively, they fatten, indeed, for the first fortnight, but then they begin to lose flesh, waste, and, after a brief period, die. A stimulating quality is imparted to food in four ways,—first, by using aliments that are not simple and concentrated,—milk, for instance, instead of sugar, or butter alone: secondly, by varying our food at different meals: thirdly, by the use of condiments: fourthly, by taking with our meals fermented liquors.

In infancy and childhood, what is wanted is food easy of digestion, but not stimulating, nor of the most nutritive quality, for that in early life heats and excites. Food of this description is signified by the term "light food." Light food goes with frequent meals,—that is to say, the stomach which

requires it will consume a moderate quantity only at a time, and so require another meal before a long interval.

The nearest approach to the digestion of children is that of convalescents after exhausting illness. In strumous children, a diet more nutritious and stimulating is required. In age, which is second childhood, frequent and moderate meals again are necessary; but they must not consist in any large proportion of liquid aliment, like those of young children and convalescents: and they require to be both nutritive and stimulant.

In those, whose physical strength is largely drawn upon, in nursing women, in men in training for athletic feats, a diet at the same time nutritive and stimulating, and plentiful, and repeated meals, are necessary.

To grown up persons, in health, but with no similar calls upon their strength, meals few and sparing, varied in quality, nutritious, but neither too easy of digestion, nor combining adventitious stimulants, and just hearty enough to prevent craving for food at intermediate hours, are to be studied. The general tendency in the strong and the healthy is to overload the stomach: with such the appetite commonly exceeds the powers of digestion; and the rule to be constantly borne in mind in respect to diet (as to everything else) is moderation and self-restraint.

These heads, and the views to which they lead, having been fully gone into in the work already referred to, I hence proceed to wind off the thread of practical observations and advice, which I propose should constitute the present chapter.

We may assume it to be true, that men in good health, and not taking violent exercise, for the most part eat too much food, and would be the better for reducing their diet; and carrying the same principle into derangement of the system and ill-health, we may safely lay it down, that the greater number of complaints may be benefited, if not cured, by abstinence. But physicians have to study exceptions as well as rules: if the latter are the first learnt, and the most obvious, the discrimination of the former, or the distinguishing those cases to which common rules do not apply, is the more difficult part of medicine and surgery. Or, deviations from common rules depend upon other rules of more partial application, which have to be sought when the first are known.

So, in the present case, it is true that digestion is an effort, the toil of an organ, which exhausts its powers, and sympathetically lowers for a time the tone of the system; that a full meal, to a certain extent, oppresses the vital economy, which, so overborne, only recovers its forces, after the up-hill labour of digestion has been accomplished. But it is not less true, that food taken in moderation,

and when wanted, independently of the nutriment it contains, and before that is conveyed into the circulation, and while digestion is beginning and in progress, directly and immediately renovates and invigorates.

To give an example,—a very learned and distinguished person told me, in conversation on the subject of digestion, that his brother, a middle-aged man, not deficient in muscular strength, and leading a country life, is compelled to take his breakfast immediately on rising. If, instead of this, he begins the day with exercise or study, he becomes speedily exhausted, and remains so for the rest of the day. My informant had been struck with his brother's idiosyncrasy, as, in his own case, things are just reversed. To enable *him* to go through the mental and bodily exertion of the day, it is necessary that he should eat nothing for three or four hours after rising. His stomach, it appears, does not wake as soon as his brain: that languor of digestion, which sleep induces, is not with him shaken off till some time after rising.

His brother's case is pertinent to my present argument. To mention another:—a gentleman, aged fifty-four, is under my care, who, with a pulse which varies from twenty-one to twenty-nine beats in a second, is in perfect health, with this drawback,—that he has had two epileptic fits, one severe, the other transient, and several threaten-

ings. The worry of business in which he is engaged, the mental excitement and exhaustion consequent upon it, are attended in him with a sensation that he will lose himself, which stimulants and quiet, when at the worst, have removed. In his ordinary habits, this gentleman does not feel himself secure (and as he has learned by experience with reason), unless he takes a cup of tea and a slice of bread and butter in bed before rising, his hour of rising being seven, and his subsequent breakfast-hour nine. After more excitement of business than usual the day before, he adds some brandy to his dose of tea, of the necessity of which his feelings of greater depression and physical alarm on waking now advertise him. Such a case, in which circumstances have produced a lowered tone of body, conveys, indeed, a great deal more than I have advanced it to illustrate, but it strikingly exemplifies the principle, that food may be used, in fitting circumstances, as a direct or necessary stimulant.

The following instance exemplifies the same fact in one of a very different habit of body. A gentleman, aged sixty, tall, large in person, who has had two or three threatenings of an apoplectic seizure (for which I have attended him, and which have been averted by prompt and copious depletion, by cupping and aperient medicine), is in the habit of eating, not in excess, but heartily, at break-

fast and dinner. But he finds these two nutritious meals insufficient, and after being engaged in business in the fore part of the day, is liable to sensations of sinking, alternating with palpitation of the heart, unless he eats a meat luncheon, and drinks with it a glass of porter. I am sure that this gentleman could not preserve his health without this third meal; yet his system is full and plethoric, although, at the same time, inclining to relaxation. A person of greater physical vigour would not feel the want of a third meal; a spare person, not of the first strength, would want it, and have no doubt about, and obviously incur no risk in taking it.

It is a rule of dietetics not to load the stomach immediately before sleep. But this has likewise occasionally to yield to the principle I am now illustrating, the use of food as a stimulant.

A gentleman, about forty years of age, when living, in point of diet, as he thought, very carefully, exceeded his strength by superadding literary labour to professional business; at length, night after night, he found himself, on going to bed, chilly, disposed to shiver, his pulse like a thread, with an unpleasant tendency to lose himself, and a feeling as if he would faint, joined with vertigo. These sensations he at first relieved by drinking hot water and sal volatile, and hot water and brandy, upon which the action of the heart

became stronger, a glow came upon the skin, and he would get to sleep, liable, however, to be broken by a return of the same feelings. I advised this gentleman to eat a light supper regularly an hour before going to bed, and to drink three glasses of sherry; when the unpleasant feelings which he had up to that time experienced, left him. Those who have mental exertion to go through in the evening, are unfitted for it by a hearty dinner, while from a light one they may not derive support enough. To such persons a moderate dinner and a light supper are the proper substitute for a single nutritious meal. These rules and examples will not, I trust, appear trivial. The relief gained by attending to them is immense; and though they seem obvious, yet they do not occur to every one by whom they are needed.

The following case exemplifies more generally the injurious effects which may arise from neglect of adequate sustenance.

An artist of eminence I had occasion to prescribe for under these circumstances. A few days before, he had suddenly dropped down when in his studio, and lost his senses for a few seconds; since then he had been threatened with another such seizure. When I saw him, he was pale, his countenance expressive of alarm, his pulse feeble; he had come in from a walk, and was apprehensive of another fainting fit. Upon drinking, at my desire, some

brandy and water, he recovered; his colour returned, and the faintness wore off. I learned that this gentleman had literally starved himself; that he entertained an aversion from animal food, except in the form of soup, that he lived upon puddings and vegetables. He had indulged this humour so far, that the appearance of the meat upon his table when his family dined, produced sensations amounting to loathing and nausea. Nevertheless, it was evident, that animal food was now necessary for him, as the means of restoring his strength; and as I found that he would have less reluctance to attempt to take it at an unusual hour, I desired him to try a beefsteak at luncheon, and again at supper, giving up his six o'clock dinner altogether. I likewise prescribed some tonic medicine. Pursuing this plan, he lost his faintnesses, and gained strength.

Every one knows that exhaustion and want of sustenance will produce faintness, dizziness, headach. But unquestionably, in individual cases, the source of these symptoms is often overlooked. It is liable to be overlooked as soon as apprehension of fulness of the cerebral vessels, and of determination of blood to the head gets possession of the mind of the practitioner. And while overlooked, the treatment adopted on the opposite view is often producing the very affections it is intended to prevent, and the patients' health and constitution are undergoing

serious injury. *That* faintness and tendency to sudden unconsciousness, which great reduction of strength and exhaustion produces, may thus be driven into epilepsy; and vertigo and head-ache established as habitual ailments. The reader will allow me to exemplify these important considerations by narrating two cases.

A gentleman now in his eightieth year, who is under my care for a local complaint, formerly being in trade, fell into illness of the following kind. At the age of five-and-thirty, being of a frame slight but strongly built, he was at once living heartily, and confined constantly by business to the house. Having been for some months sensibly out of health through these causes, he was one day taken with weakness of the right leg, and inability to articulate; in an hour his speech returned, but his right leg continued weak. He was now cupped once, and purged repeatedly; after six weeks, he was sent to Bath, where he was again cupped, purged, and restricted to an innutritious diet and water. He returned to town after two months, much reduced in strength. Almost immediately upon his arrival in London, he had an epileptic seizure, and in a day or two a second, and quickly a third. Altogether he had about three hundred fits in the ensuing two years and a half; by which time they ceased, and have never recurred. Shortly after their commence-

ment, his diet was changed, he was allowed meat and wine; with this his strength improved; and with the improvement in his strength, the tendency to epilepsy lessened. During his recovery, the occurrence of anything which exhausted and lowered him was sure to bring on a fit*.

The following case is from Dr. Abercrombie. "A lady, aged twenty-five, had been frequently bled on account of symptoms in the head which had supervened on an injury. Considerable relief had followed each bleeding; but the symptoms had soon returned, so as to lead to a repetition of the bleeding at short intervals, and this had been going on for several months. When Dr. Abercrombie saw her, she was stretched upon a couch,

* This gentleman gave me the following account of the sensations with which the fits began. There was first a peculiar motion along his right leg, which quickly seemed to mount to the pit of his stomach; from thence it rushed to his head, and he fell senseless. The right leg was the leg which had been weak at the commencement of the attack; and at this time he always walked upon it with a slight halt, not bending the knee. If he tried to walk with his right leg in the usual way, the instant that he lifted it from the ground bending the hip and knee, the peculiar sensation forerunning the epileptic seizure commenced in the leg, and he fell unconscious. On the other hand, when this sensation was beginning, he could sometimes defeat the attack by pressing with his hands above the knee, and forcing the limb strongly against the ground. The limb would then for a short time be shaken by muscular action, and then be tranquil, and the fit be averted.

her face of the most deathlike paleness, or rather of the paleness of a stucco figure, her pulse very rapid, and as small as a thread, her general weakness extreme. The mass of blood appeared to be reduced to the lowest point that was compatible with life; but she still complained of frequent headach, violent throbbing of the head, confusion and giddiness. It was evident that evacuations could be carried no further; and on consultation with a very intelligent man, who had the charge of her, it was agreed, as a last experiment, to make trial of the opposite system, *nourishing diet* and tonics. In a fortnight she was restored to very tolerable health."

I am not afraid that the preceding observations will be misinterpreted. It is certain that in a large proportion of cases, apoplexy, palsy, epilepsy, are the result of increased vascular action in the head, and that a lowered diet, local and general depletion, and other local means of reducing or carrying off action, are alone advisable, and that no other plan can be safely substituted for them, or is to be thought of. But it is most important to bear in mind, in connexion with the preceding principle, that head-symptoms may begin in weakness, and from the first admit of relief by strengthening means only; and that (which is a case still more liable to be overlooked,) head-symptoms which began in fulness and local action, and have been for a

time benefited by reduction of strength, after a period may be kept up by the very means which at first were salutary, and require contrary measures for their final removal. Circumspection, based upon the belief that any contingency is possible in medicine, and sagacity resulting from a knowledge of all the contingencies which have occurred or are physiologically probable, are the main elements of professional judgment which a medical practitioner has to cultivate. In the present instance, the variety of causes, upon which the classes of symptoms under consideration may depend, is curiously extensive. As a third case, they may proceed, as will be by-and-by illustrated, from an overloaded and deranged stomach alone; or as a fourth case, they may be products of hysteria*; or as a fifth, their source may be purely mechanical†.

* I attended a woman, in whom a complete obliteration of the cavity of the womb had taken place from inflammation; so that there was suppression of the periodical relief. But she was regularly seized with attacks of pain in the head, coldness, numbness, and weakness of one side of the body, which would last three or four days. At the worst, she had an epileptic seizure in addition.

† Dr. Sweatman attended a lady who had been compelled to remain in the horizontal posture for ten years. If she sat up, in a short time she fell into, or began to fall into deliquium, and fainted. But she looked in perfect health, and had borne several children during this period. The opinions of several eminent London physicians had been taken, who, finding nothing wrong in the circulation, had all recommended tonics. Dr. Sweatman begged to see the patient's legs, which

There are, of course, infinite other disorders besides those which manifest themselves by head-symptoms, in which lowering diet and reduction would be prejudicial. It is to be laid down as a truth of universal application in medicine and surgery, that disturbance of the health of the entire body, or of a part, general or specific, takes its most important character in a practical point of view from the strength or weakness of the system attacked, and is most efficiently controlled by remedies calculated on these elements. And it probably may be assumed that the greater number of complaints, especially when beginning in persons of good stamina, have febrile and inflammatory features, or a sthenic cast; whence it follows, that at the commencement of most disorders, a spare diet, and other means of reducing the strength, are to be employed. Nevertheless, a large proportion of ailments of every description are found in connexion with a lowered habit and exhausted bodily forces; in which the contrary practice is required. It is not the disease, but the constitution of the patient, (and his age, which more than any other cause, modifies the constitution,) that has *most* to be considered in the plan of treatment. It does

he found covered with immense varicose veins. Into these, when she stood up, all the blood in her body gravitated; and hence she became faint. The legs being bandaged, she was cured at once.

not follow because a vital organ is the seat of organic disease, that the patient is necessarily to be lowered. When the structure of the heart, or of the lungs, or the brain, is materially deranged, it is still often necessary to use means to strengthen, and recruit, and stimulate. Nor is it a remark undeserving attention, that the most scientific elements of medical education, the study of morbid anatomy and discernment of inward changes, have a positive tendency, when too exclusively pursued, to lead into error, from the principle now adverted to. Taken in connexion with a keen observation of the resources of the constitution, such knowledge cannot, indeed, be too fine and minute for practical usefulness; alone, it may directly mislead. Hence it is, that while the *science* has progressed, there has been no proportionate advance of the *art* of medicine, half the best secrets of which are, to be guided by common sense, and to avoid doing harm.

There are no cases, to the successful issue of which the management of diet more essentially conduces, than those in which capital surgical operations are performed. Here again the general rule is, innutritious food, lowering, and depletion. A patient somewhat reduced in strength is in a more favourable state to undergo a grievous mechanical injury, than one in the utmost force and vigour. Accordingly, after a great operation, the first danger to be thought of is that of fever and inflammation. The French surgeons deservedly

stand high in the estimation of Europe. Not to mention the great names which they have produced, their Dessaults and Dupuytrens, who have contributed to enlarge the science of surgery, they are bold and skilful operators, not indeed in any degree superior, in these respects, to well-educated English surgeons, but fully their equals. But their general management of their patients before and after operation is inferior to that of English surgeons, being based upon too narrow principles; they look to the one point which I have mentioned only, and dread nothing but inflammation. Hence it happens that, as I am assured by a gentleman of great authority (who, being neither French nor English, is likely to be unbiassed), that the mortality which attends the practice of surgery at Paris much exceeds that in London. French surgeons have no idea of treatment beyond that of starving or lowering their patients, and hence many are lost. In strumous children, who suffer amputation of a joint, in all the young and delicate, in middle-aged persons worn by long disease, in persons advanced in life, who are compelled to undergo a surgical operation, the chance of ultimate recovery may depend entirely upon the strength of the patient being recruited and fostered by a more generous diet before the operation, and supported by the same means afterwards. I remember hearing narrated the case of a gentleman who had an ambiguous local affection, which at last

was thought to be cancerous. He was between fifty and sixty years of age. Every means were tried to disperse the tumour before an operation was recommended; and the last resorted to were strict confinement to the horizontal posture, and a course of mercury. These having failed, the operation, not a *very* serious one, was now resorted to in his debilitated habit. In a few days erysipelas and nervous irritation supervened, and the patient died, who probably would not have died had his strength been previously recruited by liberal diet, exercise, and the like. I have been a party to more than one consultation, where operations for similar disease, under parallel circumstances, have been discussed, and as the narration of this case was useful to myself in warning me from falling into the same fatal error, I mention it here, to be of like service to others. However, it more frequently occurs after than before an operation, that a surgeon has the opportunity of judiciously substituting a nourishing diet, and invigorating means, for the low diet, and reduction, which is the prescriptive treatment in all such cases.

In the observations which I have thus far made, I have considered the regulation of diet in reference rather to the whole system, or to other organs than the stomach; and have supposed no fault in the digestive powers. Let us now look to the cases in which management of the stomach is

wanted to disembarrass it of unwholesome or indigestible food, or to restore it, when below its proper tone, to health and strength.

Under different circumstances, the stomach presents every degree of failure, from capricious and uncertain digestion, to complete inability to chymify food. Except in the last case, the evil generally admits either of being corrected, or of being greatly mitigated. The stomach may be weak, but a diet suited to it will be digested without difficulty or suffering; as on the other hand, food in excess, or of an unwholesome quality, will disagree with the strongest stomach. When the proper ratio is not observed between the strength of the stomach and the quantity and quality of the food, indigestion arises; or an indigestion may proceed from an accidental cause, and be the complaint of a day, or it may proceed from error in the general habits, or weakness of the organ, and amount to established indisposition. By the term indigestion, the latter state of things is commonly meant.

In health, all that we ought to know of our digestion through sensation is, that satiety has succeeded hunger, and that for a shorter or longer period we are indisposed to exertion. When digestion is imperfect, many sensations, local and general, occur to distress and disturb us. The stomach may be the seat of pain, and of feelings of weight and distension; nausea and loathing of

food may take the place of appetite, and retching and vomiting may be continually present; the brain and nerves may be disordered, depression of spirits, headach, confusion of thought, disturbed vision, vertigo, fits of insensibility, may follow; the action of the heart may be irregular; the breathing oppressed and embarrassed, with constant troublesome cough.

The condition of the stomach itself, under these distressing symptoms, may be different in cases where the general features are much alike; and it is remarkable that the extent and ultimate importance of the changes in its structure and organization bear no proportion to the sufferings which the patient experiences. Generally speaking, the most grave diseases of the stomach, except towards their close, produce much less physical distress than the lighter.

All the symptoms now to be considered arise from disorder of the functions of the stomach, and depend directly upon its inability to digest, upon food lying unchanged in the stomach, upon failure or depravation of its secretion, upon exaltation of its natural sensibility; and this functional failure or disturbance may co-exist with no visible alteration of structure, or at all events may depend upon alterations that are so transient as to disappear in death. Ulceration of the stomach, thickening of the stomach, cancer of the stomach, produce more

or fewer of the symptoms which I have enumerated; but they produce them secondarily; they produce them when they at length cause in the stomach at times or constantly that functional failure, upon which indigestion depends.

A physician or surgeon undertaking the management of a case of indigestion, ought, indeed, first to ascertain, if possible, on what the disorder immediately depends; but here, as in other diseases, the progress of the complaint, and the influence of different remedies upon it, commonly throw the clearest light upon its nature.

An indigestion may occur in a person of a good stomach through excess, or from eating something indigestible, or from bile.

Indigestion may depend upon original weakness of the stomach.

Indigestion may proceed from mental causes, from confinement, want of exercise, inattention to the action of the bowels.

Indigestion may arise from chronic inflammation of the stomach, from thickening of its coats, from ulcer of the stomach, from cancer.

I oppose the last head and the three first, not that the three first classes of causes do not often lead to, and are not often rendered worse by the fourth,—by inflammation, ulcer, thickening,—but because they may produce an indigestion purely functional, or one in which no change of structure

is detectible; and because this fourth class of causes may come into existence without either of the influences being present which are specified under the three first heads.

Cancer of the stomach, which, in all its forms, I have grouped with the accidental changes of structure, must be considered as so far different from them, that it is unavoidable and incurable. Its seeds are born with one; but its period of invasion may probably be deferred, and its symptoms may certainly be much mitigated, by judicious treatment.

I propose to begin with exemplifying some of the principal among the kinds of indigestion above specified, and afterwards to examine the complaint in reference to the more prominent features which give it, in different instances, such different characters.

I pass over the effects of vicious excess and habitual intemperance, which, in their proper punishment, in the helpless palsy of stomach, and sickness and headach which follow, find a temporary remedy. The aim of physic is not to provide the means of combining the pleasures of vice with the comforts of virtue. The man who eats or drinks to an unwholesome excess knows how he might prevent his morning sufferings, at the time that he has not energy enough to break through his habits of self indulgence. The tonic

afternoon draught, to restore the tone of the stomach, and create an appetite out of loathing and nausea, the aperient pill at night to relieve the congestion of the bowels, which the stimulating meal will have produced, afternoon exercise in the open air: these, and the like means, help but little men,who indulge in the pleasures of the table, to retard the approaches of disease, and to render the intervals of indulgence less intolerable.

But to take a common accidental indigestion. A few nights ago a gentleman sent for me, who, having dined with moderation, and drunk three or four glasses of wine, had at twelve retired to bed without any feeling of indisposition. He awoke at one, with nausea and pain at the stomach; he then vomited, but without relief of the pain: the bowels then acted several times. When I saw him about six in the morning, he complained of a dull heavy pain at the epigastrium, pressure upon which gave him great uneasiness: his tongue was a little furred, but he had no pain, nor was there general tenderness of the belly. I considered the pain to arise from undigested food, and therefore mixed for him two tumblers of warm water and salt, which he swallowed and retained in the stomach about ten minutes, and then rejected, along with a quantity of half-digested food, containing some leaves of water-cress very little changed. He felt relieved, slept, awoke at

ten free from uneasiness, took an aperient draught, and by the afternoon was perfectly well.

To produce such an indigestion, it hardly seems necessary that anything positively unwholesome should be taken: fish, shell-fish, or raw vegetables, however, often seem to be the food at which the stomach takes offence. Yet the party may have been in the habit of eating the same kind of food without its having disagreed before; so the fault in such cases commonly is in the stomach, which is accidentally out of order, and then the least digestible part of an ordinary meal resists digestion, and becomes an irritant.

So, when, as in the case described, uneasiness at the stomach and nausea supervene shortly after a meal, it is desirable at once to bring on, or to encourage vomiting. For this purpose, half a teaspoonful of common salt in a tumbler of tepid water, followed by a second within a few minutes, if it be necessary, will generally answer. This remedy has the following advantage: if great part of the offending matter has been thrown up already, the salt and water after does not produce further vomiting, but at once calms the stomach, and subsequently acts as an aperient. If the matter thrown off the stomach is acid, the patient, as soon as the stomach is quiet, should take ten grains of carbonate of soda in a wine-glass of water, not at once, but by two or three mouthfuls. After a few

hours' sleep, a breakfast-cup of arrowroot and milk is one of the best things that can be taken, being at once light, digestible, and nutritious.

It is, however, important to remark, that vomiting is not a remedy to be used indiscriminately with all persons. A vomit agrees with good stomachs, and with young people (so children are the better for emetics at the commencement of most of their disorders). But persons of weak stamina, or of a weak digestion, are shaken to pieces by vomiting, and suffer for some days afterwards. After the middle period of life, again, the effort of vomiting, generally violent, is extremely distressing. There are some, again, of powerful stomachs and constitutions, to whose idiosyncrasy this process is abhorrent; and who can bear the roughest discipline of medicine rather than the strain and effort of retching. Before administering an emetic, the patient should be asked if he knows how emetics agree with him.

The ordinary consequences of neglecting such an attack of indigestion as has formed the theme of these remarks, are, either a smart attack of purging brought on seemingly by undigested food reaching the bowels, or several days' indisposition, impaired appetite, heartburn, furred tongue, and general uneasiness, till the food remaining in the stomach has been either at length digested, or has slowly passed off, or has been helped to get away by purga-

tive medicine. But sometimes the undigested food remains for days without altering its place, or the symptoms changing; and it becomes necessary, though late, to discharge it by vomiting, for fear of some serious illness.

Lieut. Gen. ——, aged sixty-eight, consulted me for the following symptoms. Five days previously, after a repast, which he had eaten of not immoderately, but without caution, he had been taken in the night with uneasiness of the stomach, attended with nausea, but he had not vomited. The pain at the stomach continued through the following day, when he took some aperient medicine, which moved the bowels, but without benefit: the uneasiness at the stomach remained. He then determined to disregard it, expecting that it would wear off. But this not succeeding, on the fifth day he thought the disorder too serious to be neglected; day and night there had been a wearying uneasiness of the stomach: the tongue was furred, the appetite and relish of food gone; yet he took food at his regular meals, which he digested. The pain was distinctly seated in the stomach, which was uncomfortable if pressed: the seat of the pain had not varied from the first. I made no doubt that some part of the dinner of the preceding Sunday remained undigested in his stomach. Accordingly I prescribed an emetic of a grain of tartarized antimony, and a scruple of ipecacuanha; the vo-

miting which followed, was violent and distressing; but when the stomach had been emptied by it, the pain was gone.

A common form of temporary indigestion, or disorder of stomach, results from bile, and is closely allied to the preceding instances. It often goes with them, and the same causes which temporarily weaken digestion, will produce bile. Excess in diet, unwholesome food, exposure to cold and wet, with some the mere change of the wind to east or north-east, these physical causes, and any mental disturbance, are liable to cause bile to be poured into the intestines in large quantities, from whence it regurgitates into the stomach.

Bile in the stomach is characterized by headach, sometimes attended with impaired vision, ringing in the ears, and the like, by nausea, often with a bitter taste in the mouth, by vomiting of bile, either pure or mixed with ingesta, or diluted with mucus.

Persons of the bilious temperament are liable to slight attacks of this description from slight causes. Their skin, and the white of the eye, are tinged yellow; they experience languor, loss of appetite, and severe headach. Quiet, abstinence, and brisk laxative medicine, accelerate the departure of the attack, which is disposed to last from half a day to two or three days.

I have known the affection of vision in bilious

attacks take three forms. A gentleman, aged twenty-six, who was under my care for a protracted constitutional disease, told me that he was liable, when bilious, to vertigo, attended with a dark shade over the centre of the field of vision gradually diminishing towards the circumference; so that he could not see what he looked at, but only things around, and that dimly. Such an attack might last half an hour. On going off, pain in the head, and sometimes nausea, would supervene. Another gentleman told me that he had, when suffering bilious attacks, often experienced general failure of vision, so that he could only distinguish that part of a scene to which his eye was immediately turned, all around being obscured by a brown fog. The same gentleman told me that, at other times, he had semivision of objects, sometimes seeing the right half only of objects with both eyes; while in other attacks, he had seen the left half alone. These visual eclipses would last two or three hours, being at their worst about half an hour.

The most acute and severe attacks of bile on the stomach are characterized by bilious vomiting, with pain at the præcordia, coldness, and great depression of strength. At first, the stomach is so irritable, that any attempt to allay the vomiting by medicine only aggravates the complaint: the least excitement of the organ causes more bile to flow into it. Perfect quiet and warmth are the best

remedies, joined with the application to the pit of the stomach of equal parts of camphor liniment and laudanum upon hot flannel. After a little, the stomach becomes more composed; and there are several remedies, which in different cases, admit of being then beneficially used. These are, a small quantity,—an ounce, for example,—of weak brandy and water, with ten or fifteen drops of laudanum, or a wine-glass of soda-water, with a tea-spoonful or dessert-spoonful of brandy, or soda-water with seven to ten grains of carbonate of soda in it, or a wine-glass of hot water, with twenty drops of sal-volatile, combined or not with laudanum. The preference of either of these remedies in any case must be left to the tact of the practitioner; only they are not inert, and where one will agree and do good, the others will often do harm. With those in whom laudanum generally produces headach, it had better not be tried at first; when the patient fancies a preference for hot liquid, or the reverse, that indication should be attended to. As general rules, carbonic acid is the wholesomest restorative in such cases; while any quantity of any liquid is sure to re-excite vomiting. Those who have an habitual aversion from anything cold, women, for instance, in whom spasm of the stomach is so produced, yet when rallying from a bilious stomach-attack, are often revived and restored to comfortable feeling

by small draughts of cold soda-water; which in health would disagree with them.

It is sometimes useful in such cases, at their commencement, and when the retching is very violent, and pure bile is being thrown off, to wash out the stomach by a large draught of bland mucilaginous fluid, as tepid barley-water, or by very weak chamomile tea; but in general, this is bad practice, and only protracts the disposition to vomit.

As soon as the stomach is perfectly tranquil, it is desirable to administer a laxative dose, which carries off the bile from the bowels, and helps to set the system to rights. The infusion of senna with equal parts of the compound decoction of aloes, with a drachm of some neutral salt, and of tincture of senna, and compound tincture of cardamoms, will answer this purpose.

A young gentleman lately consulted me, in whom the severe cold of the last spring, and the adoption of more sedentary habits than he had been accustomed to, had produced a most troublesome tendency to bile upon the stomach. Abstemiousness, moderation in exercise, abstinence from wine and fermented liquors of all kinds, with doses of aperient medicine twice a week, kept him in health. The least deviation from this strict rule, and headach, sickness, and vomiting of bile at the worst, supervened. Calomel or blue pill added

to his purgative dose, invariably made him worse, and had to be scrupulously avoided.

In general, those who suffer from bile, are the better for some form of mercury, followed by an aperient; a fact which seems at variance with the phenomena of the preceding case; but it is not really so. Bilious people are those who have a stronger disposition than others to form bile. In all, but particularly in bilious people, preparations of mercury increase the quantity of bile they form. Now, if the disposition is not great, the bile formed by the mercury is all carried off by the subsequent purging, and the system is completely cleared of bile for the time. But if the disposition to form bile is greater, anything that heightens it only does greater mischief; the bile is formed there in such quantities that the blood cannot be cleared of it; and the only safety and comfort of the patients consists in adopting the rules which are calculated to prevent the redundancy of the humour on which their habitual indispositions depend.

Habitual indigestion consists in weakness of stomach, either original, or brought on by incaution in diet, or by neglect of exercise, or by too close occupation, or dependent on organic disease. Indigestion produced by any cause, is liable, without careful treatment, to lead to organic disease, to thickening and ulceration of the stomach.

The following case, in which the weakness of stomach appears to have existed from birth, well exemplifies most of the ordinary features of this complaint, and some of its less common and more remote consequences.

Mr. H. R., aged sixty-four, from a boy has had an appetite always moderate, when his digestion has been at the best; but that has been repeatedly disordered in attacks which have lasted several weeks, coming on and leaving him gradually. During these attacks, he has been well and free from all uneasiness, as long as the stomach has been empty; and the immediate effect of a meal has been to produce comfortable bodily feelings; and these, indeed, after a meal, he could prolong by continuing to excite the stomach by new ingesta; so by drinking wine, and then hot tea, after dinner, he could put off the distress and suffering which would attend digestion. That suffering consisted in severe pain of the stomach, with a sense of weight and distension, often attended with heartburn. These symptoms, as the consequences of his breakfast, would come on about eleven in the forenoon. The same would supervene at seven or eight in the evening, unless put off by the use of stimulants, which seemed at the same time to retard the commencement of digestion. In that case he would go to bed at eleven, but wake after two or three hours' sleep in great

suffering. The extent of the pain depended upon the inability of the stomach to digest; sometimes digestion was already half gone through, and interrupted by heartburn only, when an alkaline effervescent draught would quiet the stomach, and digestion be completed. At other times, this means giving no relief, he was compelled, for present ease, to excite vomiting mechanically, when the meal of the preceding evening would be thrown up nearly unchanged; the pain would then cease, and he would sleep and wake in good health.

This gentleman had, at different times, made trial of almost every remedy. Tonics, from the mildest to the strongest, from chamomile tea to quinine, he had found either nugatory or prejudicial. Two remedies alone had benefited him; these were just enough of the compound extract of colocynth taken in the afternoon to keep the bowels open; the other a few grains of magnesia in an effervescing mixture, to relieve flatulence and heartburn. On one occasion, he had thought himself the better for the application of a mustard poultice to the pit of the stomach. His food, when his stomach was the most disordered, consisted of gruel, or soup and bread, or boiled whiting, and he took no wine. As he recovered from each attack, the stomach would be extremely capricious, and one day he would be better for and digest nourishing and stimulant food, and then be com-

pelled again to resort to the simplest for a few days.

Living upon these conditions, in the autumn of 1835 the following change took place. Of a sudden, the action of the kidneys was remarkably increased (a symptom, in elderly persons, always pregnant with alarm); in a week, the ancles become swollen and œdematous; in another week, the increased action of the kidneys subsided, but the legs continued to fill with water more rapidly than at first. At the same time, the digestion, which had been very much disordered before the invasion of these new symptoms, became stronger and better than it had been for a considerable period. The œdema of the legs however increased, and the belly began to enlarge. Towards Christmas, the dropsy, which had declared itself, and the swelling of the legs, rendered it difficult for him to move up and down stairs. He had become thin and extenuated in the upper part of his person; his countenance pinched and yellow; his appetite, too, now failed him, and his digestion. At this time, he put himself under my care. On examining the belly, which contained a few pints only of fluid, I found, at the upper part, and rather to the right, that is to say, over the place of the lesser or right portion of the stomach, a diffused hardness or boardiness, with tenderness on pressure. I therefore applied eight leeches over this region; he

became faint with the loss of blood, which was thin and serous. The following day I applied a blister over the same surface, and recommended him to take small doses of blue pill and compound extract of colocynth daily, and to live on gruel; when the blister had healed, the tenderness had gone; at the same time his countenance had improved, and his appetite. It was my impression that the stomach, at that time, was the seat of chronic inflammation, which the remedies resorted to seemed to have removed or mitigated. Nevertheless, the water went on accumulating in the legs and belly, and the action of the kidneys was less than natural. Yet his strength improved with his digestion. His pulse, though weak, was regular, the action of the heart was, in every respect, normal; he could sleep on either side, or on his back, and with a single pillow. There was no albumen in the urine. I thought that what was now wanted was the restoration of the action of the kidneys; to produce this effect, he therefore took, but ineffectually, the decoction of broom-tops with the acetate of potass, then decoction of taxaracum. I then gave him extract of elaterium, combined with blue pill; this acted and forced the kidneys, and diminished the water, but, at the same time, it purged and weakened him, and disordering his stomach, made him, in other respects, worse, and threw him back. In a short time, the tone of the

stomach returned, but the water increased again. There was more dropsy, the œdematous swelling spread up the body, and in the morning his face and eyelids were puffed with fluid. I now determined to give this patient mechanical relief at all events, and accordingly I punctured his legs with a grooved needle, in twenty or thirty points each; the water flowed plentifully, and continued to exude for a week, then ceased, leaving the legs very much reduced in size, and the dropsy certainly lessened. He felt, however, more weak than before, but his digestion was tolerable. What practice was now to be pursued? It was the opinion of two other medical men, who saw him at that time, that blue pill, with squill and digitalis, should now be tried, (the more likely now to move the kidneys, from the mechanical relief already obtained.) To myself, another opinion appeared preferable; it was, that steel might now be given with advantage; and this I recommended to my patient, influenced by the following considerations. There were two plausible views of the complaint; the first, and certainly, at the time, the most probable, was that the real complaint was some alteration of structure about the stomach (thickening of the coats of the stomach perhaps, with induration and enlargement of the lumbar lymphatic glands, or pancreas, or both,) causing pressure to be made on the great veins at the upper

part of the abdomen; this supposition accounted for all the symptoms of the case, (especially the co-existence of dropsy and anasarca, without disease of the kidneys and heart.) The second supposition was, that the water proceeded from a feeble circulation and imperfect nourishment, a digestion disordered for half a century, and relaxed capillaries. Now, on the first supposition, the case was incurable; on the second, it perhaps admitted of relief. But the course recommended of mercury, and squills, and digitalis, was directed to the first alternative, at once to excite the kidneys, and to resolve any inward thickening, (in which process some additional weakening was involved;) steel, on the other hand, was calculated to fulfil the second indication, it might strengthen. The event showed, as far as such an instance can show, that the choice of the latter course was the right one. The patient took two drachms of steel wine, at first twice a day, afterwards three times a day; in two or three days, the kidneys began to act, and in a few weeks the legs and belly were emptied of water. The patient's strength, in the meantime, slowly increased; and after several fluctuations during the last two years, between ill health and convalescence, the patient is now in the enjoyment of renovated health, and a better digestion than he has generally possessed.

From the preceding striking instance of the

features and course of habitual indigestion, I shall proceed towards two objects, to consider the remedies by which it may be alleviated or mitigated, and some prominent features, which give a character to individual cases.

Of the remedies of use in the cure of indigestion, are either general or special. The former, as requiring to be resorted to in every case of indigestion, I will mention first and separately: the latter may be appropriately described in connexion with the peculiar and special features which the disease often assumes, and to the relief of which they are individually applicable.

The general remedies for indigestion are regulation of diet, exercise of the mind and body, but not in excess, especially if combined with amusement, and the use of aperient medicine and of tonics.

The rules of diet for weak stomachs flow directly from the principles already explained. For instance, when at the feeblest, for the principal meal the stomach will bear the lightest food only,—arrowroot, or gruel, or soup with bread, or the most digestible fish simply boiled; when stronger, it will digest game, while as yet incapable of digesting poultry or butchers' meat; afterwards wine, which, in the weaker states, heats and irritates, strengthens and provokes digestion: in each stage, pastry, highly-seasoned dishes, rich food, are to be avoided; vegetables, pastry, and fruit, to be

avoided, or most sparingly partaken of. At first the food is to be light, little more than digestible; then digestible and nutritious; afterwards it may combine a stimulating quality besides. But there are cases which go beyond common rules: in some, vegetable diet is the best; in others, the smallest quantities of a single kind of food often repeated; in others nutritive food, but only one meal partaken of in the twenty-four hours. The following are instances in point.

A gentleman (Dr. Abercombie mentions) accustomed to moderate, but very comfortable living, had been for many years a martyr to stomach complaints, seldom a day passing in which he did not suffer greatly from pain in the stomach, with flatulence, acidity, and the usual train of dyspeptic symptoms, and in particular he could not touch a bit of vegetable food, without suffering from it severely. He had gone on in this manner for years, when he was seized with complaints in his head, threatening apoplexy, which, after being relieved by the usual means, showed such a tendency to recur, that it has been necessary ever since to restrict him to a diet *almost wholly of vegetables*, and in very moderate quantity. Under this regimen, so different from his former manner of living, he has continued free from any recurrence of the complaints in his head, and has never been known to complain of his stomach.

A female had suffered the gravest stomach symptoms, giving rise to the belief that she laboured under cancer. She had severe pain in the stomach, when the smallest quantity of food was taken, with great tenderness on pressure, and constant vomiting occurring regularly at a certain period after eating. A variety of treatment had been employed without benefit, when Dr. Barlow determined upon trusting entirely to regimen, by restricting her to a diet, consisting wholly of fresh-made uncompressed curd, of which she was to take a table-spoonful at a time, and to repeat it as often as she found it desirable. On this article she lived for several months, and recovered perfect health.

The gentleman whose case I have recently narrated at some length, suffered a very severe relapse into indigestion after the influenza of last spring. There were several weeks, during which he found it necessary to give way to the complaint, and to nurse his power of digesting in the following way: he took a single meal only in the twenty-four hours, and that a light but nutritious dinner. This single meal his stomach could generally digest tolerably well. In the morning he took one small cup of tea, and one mouthful of bread. If he exceeded this quantity, which appeared necessary to sustain him for the day, his stomach became in an hour painful, disturbed, flatulent, and did not recover itself till the following morning; his dinner taken in the afternoon

then only disordered him still more, causing him a night of pain.

The reader is to gather from these instances, which it would be tiresome to multiply further, that the worst sufferings of indigestion often admit of relief through the simplest means, which, again, are often not to be hit upon at once, but are found out in each individual case by patient study of all its peculiarities, assisted by a thorough knowledge of the principles on which digestion depends, as well as of all the observed exceptions.

Upon the general efficacy of bodily exercise in this complaint, and of systematic friction (where sufficient exercise cannot be taken) to promote action of the skin, upon the advantage of change of occupation, mental relaxation, and amusement, change of air and scene, upon the injurious effects of fatigue and exhaustion of all kinds,—it is unnecessary to enlarge: these are points which anyone's common sense and self observation may regulate.

The next means are the use of aperient medicines. Indigestion often occurs in persons, who, not taking adequate exercise, and confined to the house by business, fall into an habitually costive state of bowels. They lose their appetite; the tongue is furred, the breath heated; they have frequent headach; and experience after their meals a sense of weight, distension, and general uneasi-

ness. In such persons, the use of opening medicine is highly beneficial. But strong purgatives are to be avoided; for though they relieve the bowels, they directly weaken and disorder the stomach. Mild aperients only are therefore to be used, mercury being combined with them when necessary. For example, a dinner-pill (two should be taken) consisting of four grains of extract of rhubarb, and half a grain of carbonate of soda; or at night equal parts of castile soap and compound extract of colocynth, of each four grains; or the same, with two grains of scammony, or, instead, a drachm of the lenitive electuary; or, in the morning, a drachm of Epsom salts in peppermint water, alone, or with two drachms of tincture of rhubarb; or two drachms of Cheltenham salts, in a third of a pint of water. Not to multiply instances of the efficacy of such plans, I cite the following only as an extreme case, rendering the mention of commoner ones unnecessary.

A protracted case of stomach disorder was treated by Dr. Parry, in which there was vomiting so constant, that every thing was rejected, even a tea-spoonful of water. The case had gone on in this manner for several weeks, and the patient was reduced to the last degree of emaciation, when Dr. Parry ordered half a grain of aloes to be given every four hours, moistened only with a few drops of liquid. This was retained, and acted gently on the bowels; and, in less than two days, the complaint

entirely subsided. The bowels had been freely moved during the previous treatment, and other remedies in great variety had been employed without any benefit.

It is often advantageous to combine in indigestion aperient medicine with tonics; or, this suggestion properly applies to the specific cases where tonics are available. It is much more common to meet with instances where aperient medicines alone are salutary, than in which tonics are advisable alone. Of tonics alone, perhaps, the nitric acid with some bitter is generally the most useful; but all are occasionally valuable: even chamomile tea (a teacup of a very weak infusion) taken on rising, sometimes has a sensible effect; gentian, again, columbo, the infusion of orange-peel, combined with five grains of carbonate of soda or ammonia, are often beneficial. So, again, there are cases, in which a dessert-spoonful of white mustard-seed, swallowed daily, has been of sensible service. Nor are these recommendations to be disregarded, because they are empirical; and the success attending them so far accidental, that it is impossible to say beforehand, which of such different remedies, or whether any, will prove of use. Take, for example, the following instance from Dr. Abercrombie; there is no question but the practice was purely tentative of combining in this case a tonic with an aperient, but it was perfectly successful.

A lady, aged about thirty, laboured under the

following symptoms in the summer of 1818. She was affected with violent pain in the stomach, which seized her immediately after dinner, continued with great violence during the whole evening, and gradually subsided after midnight: it sometimes occurred after breakfast, but more rarely. The complaint was of two years' standing, during which time a great variety of practice, and every variety of diet, had been tried, but with slight and transient benefit. The paroxysms occurred with perfect regularity; she was considerably reduced in flesh and strength, and had a sallow unhealthy look, and her whole appearance gave strong grounds for suspecting organic disease. In the epigastric region no hardness could be discovered, but there was considerable tenderness on pressure at a particular spot. Various remedies are employed during the summer with little advantage: at last, however, she appeared to derive some benefit from lime-water, and returned home in the autumn rather better. But the affection soon recurred, and she returned to Edinburgh as bad as ever. After another trial of various remedies, this severe and intractable affection subsided, under the use of the following simple remedy:—She took two grains of the sulphate of iron three times a day, combined with four grains of the aromatic powder, and one grain of aloes, which was found enough to regulate the bowels.

Under the use of this remedy, she was soon free from complaints, and has continued to enjoy good health.

The special features of indigestion which, each when most prominent, gives a character of its own to the disease, and requires some particular modification of treatment, (setting aside, for the present, the attendant symptomatic disorders,) are referable to three heads. Or the stomach may be disordered in three ways, in its secretion, in its mode of sensibility, in its action. In health, the stomach secretes gastric juice proper in quality, and just enough in quantity; it feels nothing when proper food is put into it, and undergoes digestion; and that food when changed into chyme, or digested, it moves on by the action of its muscular fibres into the intestines. But in indigestion, the stomach is liable to form a liquor, indigestive, irritating, or inert and profuse in quantity; it may be the seat of pain and tenderness; its action may be inverted. Each of these form principal features in different cases of indigestion, which may be studied under the three heads of heartburn or waterbrash, heightened sensibility of the stomach, nausea and vomiting.

Heartburn.—The cause of heartburn is superfluous acid in the secretions of the stomach; or it is probable that there is something more than excess of acid, and that the acid formed is different

from the wholesome solvent acid of the gastric juice. However this may be, heartburn depends upon the presence of a superfluous quantity of acid in the stomach, which manifests itself by its effects on the sentient surface of the œsophagus. From time to time the acid escapes from the opening of the stomach, regurgitating along the tube of deglutition. But the sensibility of that tube is different from that of the stomach; it is much higher, and the sour liquid, which was not felt by the stomach, immediately excites in the œsophagus a painful sense of acridness.

The proof that it is the *acid* quality of the secretion which produces the sensation of heartburn, lies in the fact, that an alkaline draught immediately relieves it; ten grains of the carbonate of soda or potass, or magnesia, in a wine-glass of water, directly allay or lessen the unpleasant feeling, which if it recurs, again gives way to the same remedy.

Most persons have experienced heartburn; it is the commonest form of indigestion. In general, it occurs under the following law. The stomach has been set wrong by some imprudence in diet; and in the evening, or at night, heartburn is felt. The heartburn is for the time removed by an alkali. But for several evenings, the digestion having once been set wrong, it returns. The disposition to form acid then gradually wears off; re-

covery is promoted by abstemiousness in diet, and the use of one or two doses of aperient medicine.

Heartburn is of common occurrence in delicate women; they are slightly out of health, languid, of capricious appetite; the heartburn is felt more frequently after breakfast than after dinner, in the latter being prevented or corrected by the stimulus of wine. In such cases the following common formula, combining a tonic with an alkali, is often beneficial,—six drachms of infusion of orange-peel, joined to the same quantity of infusion of cloves, with from seven to fifteen drops of liquor potassa, and ten to fifteen drops of the aromatic spirit of ammonia, to be taken twice a day; that is, two hours after breakfast, and an hour before dinner. This remedy pursued for a fortnight, with occasional use of aperient medicine when necessary, will often completely restore the tone of the stomach in this trivial disorder. In place of the infusion of orange-peel, twenty drops of the compound tincture of gentian, in three table-spoonfuls of spring water, may be used, which is the more convenient from its portableness. In general, I know no better or wholesomer tonic of a light description than the above combination, ammonia, namely, with gentian, soda being added or not, according to the quantity of acid formed.

There are some with whom it is beneficial to

take a small quantity of alkali *with* their meals; they should take, for instance, five grains of carbonate of soda, and five of magnesia, in a wine-glass of hot water, or milk and water, at breakfast, and the same or a larger quantity in half a tumbler of Seltzer water, at the close of dinner. The formation of acid is thus prevented. The connexion between acid in the stomach and gout is well known. I am acquainted with a gentleman strongly disposed to gout, whose constitution affords a perfect test of the efficacy of alkalies taken thus at meals. If he omits to take his dose of alkali at dinner, within an hour after the repast, one knuckle of his hand is sure to burn and shoot: this he invariably experiences if he neglects adding to his temperate meal the antidote to the acid which it causes.

Waterbrash.—There are patients into whose stomachs, when empty, there is poured out a vast quantity of transparent liquid, sometimes tasteless, sometimes sweet, sometimes acid, or of an acrid taste. The complaint is known by the name of waterbrash; it is more common in women than in men, and exists in every degree of severity or mildness. When the quantity of liquid formed is considerable, great extenuation often follows. It is commonly unproductive of pain, and is thrown up without nausea, the mouth filling spontaneously with the liquid, which rises without an effort, or

as in animals chewing the cud. Sometimes, however, it is the reverse, and the patient suffers very violent pain at the stomach, which is only relieved upon her bringing up in the same manner a pint or more of limpid and perhaps tasteless fluid; this may happen three or four times in the day. By an observation of Andral's, the complaint appears to arise from a low degree of inflammation of the glands of the stomach, which become slightly swollen, and pour out a more or less altered mucus, which is the waterbrash. It is a sort of relaxed inflammation, and accordingly is cured by astringents. The following formulæ are appropriate: ten grains of kino, with a third of a grain of opium, taken in water three times a day; or three grains of alum and five of kino so taken; if the fluid thrown up is acid, an alkali should be combined with the astringent.

Pain of the Stomach.—One kind of pain of the stomach has been already described. When undigested food is retained in the stomach, it is liable to cause settled pain and uneasiness,—a symptom so far useful, that it leads to the expulsion of the offending substance. The stomach sometimes marks in this manner that a particular kind of food is temporarily unacceptable to it. A gentleman, who is in the general habit of drinking porter at his dinner, for some days before a severe and alarming attack of vertigo from indigestion, expe-

rienced a dull ache in the stomach after drinking porter, which would last for an hour, and subside very slowly; he had every reason to believe that the attack of illness which followed, arose from pressing this then unwholesome liquid upon the reluctant stomach. One sort of stomach-ache thus arises from the presence, in a healthy stomach, of less digestible food.

Another kind of pain of the stomach results from habitual indigestion, and supervenes from one hour to five or six after a meal. The meal is eaten with more or less appetite: after a period, the solvent secretion not being poured out in sufficient quantity, pain more or less severe supervenes; this is accompanied with, and partly caused by distension from flatulence, sometimes by heart-burn; sometimes it depends upon the mere presence of the unchanged food, and there is little distension and no acidity. This occurrence is well exemplified in a case above narrated, page 33; I have met with it in several other instances in the same degree of aggravation. At the worst, the patient has no repose or cessation of pain till he has mechanically excited vomiting and thrown the food off his stomach, which often is returned unchanged, although eight or nine hours have elapsed since the meal. In lighter seizures, after two or three hours of suffering, the stomach beats the meal; the pain wears off, enough gastric juice

having gradually been poured out to dissolve the food.

The treatment of such a case must vary with its features. If there is tenderness of the epigastrum, leeches, and hot fomentations should be applied; and if the patient has not an irritable skin, a blister afterwards, over the stomach. By these means, what inflammatory character the indisposition may bear admits of being removed. The same object is promoted by the use of aperient medicine, and by regulating the diet to that which is plain in kind, and extremely moderate in quantity; above all things, if the patient has at all studied his own case, by attending to the suggestions of his appetite. If there is acidity present, as a temporary expedient, an alkaline draught gives great relief; and the best form is the effervescent one,—a draught, for instance, consisting of thirty grains of carbonate of potass in a wine-glass of spring water, with twenty grains of tartaric acid stirred into it. Liquids containing carbonic acid are very salutary to the stomach; whether they act on any chemical principle is not known. There is generally some flatulent distension along with the state of indigestion which I am now describing; the effervescent saline, instead of leaving the stomach loaded with more wind, promotes its immediate expulsion. One of the principal means, however, for allaying this painful indigestion, con-

sists in lowering the sensibility of the stomach by opium. This, in general, should be combined with a purgative;—the dose may consist of half a grain opium, three of compound extract of colocynth, one of soap; this pill to be taken two or three hours after the meal, the digestion of which is most painful. The aperient is given to obviate the constipating effect of the opium. Opium, however, requires to be used with caution in such cases, lest it disguise some progressive mischief of an inflammatory or ulcerative character in the organ. Opium may be given during the paroxysm of indigestive pain; Batley's liquor opii sedativus is then probably the best form; ten to fifteen drops may be administered in an effervescing saline. Opium applied externally is sometimes beneficial, either in the form of the emplastrum opii, or upon hot flannel smeared with equal parts of laudanum and camphor liniment.

Sometimes the stomach has a morbid sensibility which causes pain the moment anything is introduced into it, the pain continuing till digestion is completed. This form of disorder generally appears not to depend upon inflammatory action, or, at all events, it does not yield to the means which should be efficient against inflammation; so leeches and blisters, and aperient medicine, are commonly of no avail. The remedies which are to be tried,

and which are sometimes efficient, must be viewed as purely empirical; not that they are to be undervalued on that account, but rather the more studied, as calculated by their operation to throw light upon the nature of the disorder which they relieve.

The remedies which are likely to be beneficial, are the oxide of bismuth, given in a pill;—to begin with, two grains of oxide of bismuth combined with two grains of extract of chamomile: or kreosote, given one drop as a dose in an ounce and a-half of water three times a-day. Or prussic acid, a drop of which to two drops in a wine-glass of water, has again allayed morbid sensibility of the stomach.

A symptom the opposite of the last, is pain when the stomach is empty, often attended with craving for food, and relieved by taking it; so three hours after breakfast, as soon as the stomach has got rid of its contents, pain will supervene, that is not relieved till another meal. A patient with a pulsating tumour in the belly, and suffering habitually from indigestion and pain of the present description, was used to relieve that pain, by having recourse to another meal as soon as it recurred; taking thus between eleven and twelve bread and cheese and ale, as a corrector of the craving pain following the complete digestion of his breakfast. His tongue

was furred, his complexion loaded, the action of the bowels irregular. By reducing his diet, and prescribing the regular use of aperient medicine, his health greatly improved: at the same time, the early luncheon was forbidden, and a draught of half a drachm of tincture of henbane, seven grains of soda, and ten drops of sal-volatile, in water, taken on the recurrence of the pain of the stomach, was sufficient to remove it.

The same remedies which I have enumerated for the preceding case, have equally been tried in this, but with uncertain success. Another, that has been of use, is the nitrate of silver, beginning with a grain at a dose in a pill made with crumb of bread.

There are attacks of pain in the stomach, which are commonly described as spasms. They come on suddenly, are of the most acute description, and seldom last long; they are described as suggesting the idea of a knife stuck through the side. Women are more subject to these seizures than men. I suppose that they entirely result from distension with wind; they are allayed at once, by taking a wine-glassful either of very hot water alone, or hot water with twenty drops of sal-volatile, or with a dessert-spoonful of brandy in it; at the same time, and in which the relief seems to consist, wind breaks off the stomach. Sometimes a few drops of laudanum in hot water

form the best remedy for these seizures; but it is better to try other remedies first*.

Generally speaking, pain in the stomach rarely denotes serious disease: it is the result commonly of slight and functional disturbance, and is a matter rather of present suffering, than of apprehension as to the result. Nevertheless, this remark does not hold true always. Obstinate cases

* The principal objection to laudanum is the danger of indulging the habit of taking it, which is the greater for the false supposition that the dose must be progressively increased. This, indeed, is the case, if the remedy is daily and hourly resorted to, but not otherwise. I have under my care a patient with disease of the womb, whom I have been obliged to allow to raise her daily dose of crude opium to seventy grains; the continual increase has been unavoidable, as the remedy is used for constant pain. It is surprising (I may observe incidentally) how little her mind and health are impaired. She says that her memory is not so perfect as it was; but she experiences no confusion of head, nor any form of mental disturbance. When the use of opium is not continual, the same dose, as with aperient medicine, serves a life-time. I am acquainted with a gentleman, who, several years ago, received a charge of shot in the calf of his leg; some of the shot have lodged in the tibial nerve, and he experiences constant pain in the foot, only varying in amount. To overcome this at one time it may be interesting to mention that he used to take 700 drops of laudanum daily: however, even this dose of laudanum was ineffectual, and he discontinued it, leaving it off by degrees. This gentleman is now, from time to time, subject to spasmodic pain at the stomach, after he has taken anything to disorder his digestion. He tells me that he then has recourse to laudanum, and finds the small dose of seven or eight drops always enough to pacify the nerves of that organ.

of pain at the stomach with flatulence, recurring irregularly, lasting several days or weeks, and gradually going away, then renewed, again going away and returning, are sometimes dependent upon ulceration of the lining membrane of the stomach. This complaint is of a serious nature; for although it is often recovered from, yet a certain proportion of those attacked with it, after weeks, or months, or years of capricious indigestion, die suddenly, through perforation of the stomach, and the escape of its contents into the cavity of the belly.

Pain of the stomach frequently recurring, although commonly dependent on trivial causes, should, therefore, always be looked at with suspicion, and all the points connected with it most carefully considered. The accompanying symptom, which gives it the most alarming complexion, is tenderness on pressure, not general soreness of the whole stomach (for whenever the stomach is distended, it is uneasy on pressure), but tenderness always to be found about one spot. When with this there is disinclination to food, the tongue disposed to dryness, occasional nausea and vomiting, one would entertain serious apprehensions of chronic inflammation, thickening, ulceration. In such a case, the greatest abstinence, leeches to the pit of the stomach, blisters, a superficial issue, the milder preparations of mercury, are the appropriate remedies.

III. *Nausea and Sickness.*—There are few subjects in pathology which have more extensive relations than the present. The stomach is the centre of sympathies: no organ can be suddenly deranged, but the stomach is drawn into consentaneous disorder, and vomiting is the readiest form of disturbed action into which it falls.

To take an extreme instance: in a case, in which I performed amputation at the hip-joint (the patient happily did well), for a few hours the utmost prostration existed, the patient hardly was heard to breathe, the pulse was quick and tremulous, no water was secreted, she vomited repeatedly. In injury of the head, or sudden effusion in the brain, vomiting is an almost constant attendant,—upon sudden and violent mental exertion, vomiting occasionally takes place,—the same is produced by violent bodily exertion on a full stomach. If any inward action is going wrong, if a gall-stone is passing through the gall-duct, a calculus descending from the kidney,—vomiting appears to follow as a natural consequence.

The mechanism of vomiting is very simple, and the reverse of what it is popularly supposed to be. In vomiting, the stomach is perfectly passive. It does not act in expelling its contents. It is a flaccid bag, squeezed by external pressure. The muscles of the belly and the diaphragm suddenly and convulsively compress and empty it. This convulsive

action depends on the sensation of nausea. The phenomena are paralleled by those of sneezing; if you look at the sun, or take a pinch of snuff being unaccustomed to it, a sensation is excited, which is relieved by an uncontrollable convulsed expiration. Nausea is the analogous sensation, which is relieved by retching.

The two forms of nausea and vomiting that are most familiar, are those attending early pregnancy and sea-sickness.

The vomiting of pregnancy is very variable. Generally it is first experienced shortly after conception, and terminates with quickening. Sometimes it is hardly experienced at all, in other cases, it lasts during the whole of pregnancy. Sometimes it gives little distress, in other cases it has been so constant as to compel the induction of premature labour to save the patient.

The vomiting of pregnancy seems, to a certain extent, dependent upon change of posture; the nausea and retching are commonly experienced on rising; the vomiting, however, frequently recurs after breakfast; the sufferer then lies down, becomes tranquil, and afterwards, as the day goes on, her stomach usually recovers its tone. The vomiting sometimes returns at other periods of the day. Preserving the recumbent posture always mitigates the disposition to vomit. The cause, however, of this sickness is in a small part only mechanical.

In an operation which I performed for an obstruction which had been caused by inflammation following labour, and which had a prosperous result, on half-dividing the extremity of the womb, the patient became sick. The vomiting of pregnant women is caused by sympathy of the stomach with the womb; it is a sudden indigestion produced by consent with a remote and labouring organ*.

In sea-sickness, the nausea and vomiting result from sympathy of the stomach with the senses and brain. It is the feeling of disturbed equilibrium which, in this instance, deranges the organ of digestion. This any one newly at sea may soon ascer-

* To some of my readers the following relation of the subject may appear interesting. Such is the force of sympathy which the womb exerts, that almost every functional disturbance may be produced through it. Salivation has been produced by pregnancy. The case which I have to narrate is one in which a disease, which pregnancy arrested, has been equally arrested by salivation.

I attended a patient with Mr. Angus, of Greek Street, who was the subject of violent spasms of the limbs, leading to fits of insensibility, when at the worst. These spasms, at one time, suddenly ceased; soon after, she found that she was pregnant; and her delivery took place nine months all but two days after the sudden cessation of the spasms. Eight days after her confinement, the spasms returned; and when she had suffered with them for some weeks, I was consulted. I advised that some local means should be applied at the back of the neck where she felt pain that seemed to shoot thence down the arm, and prescribed mercury to affect the mouth; she recovered. She has since had four serious relapses; each time she has completely recovered by taking mercury in large quantities. Her amendment has invariably commenced as soon as the mercury has affected the system.

tain to be the fact. If you walk or stand upon the deck, all is seen and felt to be unsteady and shifting; the vessel moves even on a calm sea with a gentle undulation, and the masts and sails and lines of cordage now sink, now rise; all is visually unsteady, and you have, at the same time incessantly to adapt your body to the varying inclination to the horizon of the plane on which you stand; unaccustomed to these impressions, you become giddy and sick. If you have partaken of a meal shortly before sailing, the effect is but the more certain and rapid; the stomach is contending with the ingesta, and all the more readily disordered.

That it is the sense of disturbed equilibrium which produces the sickness, is shown by the following proof. If instead of maintaining the erect posture, you lie down, or, in other words, assume a posture of more stability, the nausea abates; and if, in addition, you close your eyes, and exclude the visual disturbance or unsteadiness, the nausea is further lessened.

Upon these facts the treatment of sea-sickness turns.

If your voyage is to be a short one, from ten to thirty hours, go on board with an empty stomach, betake yourself to your cot, and lie down. It is better to go on board fatigued, which will enable you to sleep at once; when you wake, preserve the recumbent posture; some nausea may super-

verse, but it will be slight, and soon pass off; if you feel an appetite for food, eat very sparingly of the lightest and plainest food.

If your voyage is to be a longer one, still it should commence in the same manner; and during the sleep into which you fall from fatigue, your senses will become, in a degree, accustomed to the motion of the vessel; and the training will have begun, by which the art is acquired of preserving one's equilibrium on a rocking surface.

Nausea and vomiting are liable to occur after important surgical operations, or grievous bodily accidents, in three forms.

One kind has been already adverted to; it goes with the general prostration, and follows the bodily injury immediately. It is comparable to that which is experienced by those upon whom mercury acts as a poison; they have headach, feeble intermitting pulse, nausea and vomiting. Small quantities of brandy in soda-water, form the best remedy. If the vomiting is obstinate, an opiate plaister or liniment to the pitof the stomach will assist.

A second kind is bilious vomiting, the nature of which has been fully noticed at page 30. After the amputation of a limb, in twenty-four or forty-eight hours, the patient will sometimes experience such a seizure.

A third kind, which sometimes follows within

forty-eight hours after surgical operations, is vomiting of large quantities of a transparent grass-green acid and acrid fluid, without the bitterness of bile. This commonly goes with great debility, and is of most unfavourable augury. Effervescing alkaline draughts, with laudanum and a mustard plaister or blister applied over the stomach, and if the bowels have not been relieved, a purgative injection, are the proper remedies.

Vomiting occurring habitually as a mode of indigestion from primary disorder of the stomach, is not less distressing from the suffering it occasions, than alarming from the possible nature of its source. Cancer of the stomach is uniformly attended with this symptom, although in some cases of this fatal disorder, it is much more prominent and constant than in others. In the last stages of the disease, when no ingesta are received into the stomach, the matter thrown up resembles coffee-grounds, and consists of blood changed by the action of the stomach. Uneasiness of the præcordia, loss of appetite, vomiting when food is taken, tenderness on pressure, and sensible tumour or hardness of the epigastrium, are the pathognomic features of cancer of the stomach, under which the patient gradually becomes emaciated, and finally dies of exhaustion and inanition. But fortunately there are few cases absolutely without hope. And it has frequently happened that when the symptoms have

been such as to lead to the greatest apprehension of the worst results, under fortunate treatment they have been dispelled.

To some which I have already given, (pages 41, 43), I will add the following, as exemplifying the efficacy of another plan of treatment.

A young woman in the family of the English consul-general at the Hague, in the spring of 1818, was subject to intractable vomiting, which had gradually supervened in three months. At first, the vomiting took place occasionally only; after a short time, she observed that it occurred after those meals at which she took meat; in time, after every meal, and occasionally when nothing had been taken into the stomach. However, she threw up no blood or coffee-ground fluid; and although there was pain at the præcordia, and tenderness on pressure, there was no hardness. She had become greatly emaciated; a variety of remedies had been tried, and had proved ineffectual. I recommended that she should take three times a day a quarter of a grain of sugar of lead, and a third of a grain of opium, and that a blister should be applied to the pit of the stomach. On the following day the vomiting ceased, and never returned; the lead and opium were however continued for a week, (opening medicine being likewise given,) and a second blister applied.

These were cases of vomiting without alteration of structure of unusual severity; commonly the

complaint yields more readily—to abstinence, rest, aperient medicine, opiate applications, and blisters to the pit of the stomach, opium administered internally, kreosote.

The principal symptomatic disorders which flow from indigestion affect the head or the chest. Upon these I may add a few brief remarks.

In the severest cases of head seizure from stomach derangement, the patient falls apoplectic; he lies in a state of heavy stupor; the remedy wanted to relieve which is an emetic: the stomach is oppressed with a refractory meal. It requires, indeed, no small exercise of judgment to distinguish such a case; but thus it has made itself known. A person has fallen insensible; the countenance pale, the pulse weak, not full and laborious, the insensibility complete; some stimulant has been given to reanimate expiring life. Then vomiting has followed, an undigested meal has been thrown up, and the patient has recovered.

Some of the less serious forms of head affection from impaired digestion have been already adverted to. The commonest features are excellently described in a paper by the late Dr. Warren, from which I extract the two following passages as giving a very graphic account of the disorder. The treatment is the cure of indigestion.

"In one form of disorder," says Dr. Warren, "the pulse is languid and feeble, but not more

frequent than natural; the tongue is whitish and slightly coated, the edges of it are of a pale-red colour. The patient perceives a sensation of mistiness before the eyes, and general indistinctness of vision; he feels a dull pain or weight in the head, attended with some confusion, is slightly giddy, and fearful of falling. When on foot, he thinks himself insecure unless in company, but if leaning upon the arm of a companion, sitting still or moving in a carriage, he is free from giddiness and alarm. If desired to walk towards a distant object, he is reluctant to make the attempt, from a doubt of his ability to reach it without falling; and with the inconsistency of a person under alarm, will, without hesitation, proceed to a greater distance than that which has been proposed to him, provided that it be in the direction of his own house, or lead him to any other situation where he conceives he may be within reach of assistance. These symptoms are attended with an uneasiness or irritation of the stomach, a slight nausea, and often by a sensation of constriction of the fauces, accompanied with a watery secretion from the posterior part of the mouth. Coldness, slight stiffness or numbness of the fingers, are sometimes present, and the other parts of the system are in general affected with a great degree of nervous sensibility."

"In general, restlessness precedes the attack

which is followed by uneasiness of the head, and want of the usual distinctness of ideas, oppression of spirits, disinclination, and sometimes incapacity for mental exertion, chillness of the body, coldness and dampness of the hands and feet. Next succeeds pain or dull aching of the head, sometimes of the forehead only, at others affecting the crown of the head, and posterior part of it, attended with a sensation of coldness and tightness of the scalp, slight giddiness, weight, pain, distension and stiffness of the eyeballs. In some cases, as these symptoms increase, they are accompanied by tingling and numbness of the fingers and hand. This numbness is never so severe as entirely to deprive them of feeling; and, as far as I have observed, seldom attacks the whole hand at the same time; but usually first attacks one or two of the fingers, and as they recover, spreads to a neighbouring finger, and having, in this manner, traversed the whole hand, extends to the wrist, after which it ceases altogether. The symptom last mentioned is of short duration, seldom continuing more than a quarter of an hour; but it leaves a slight sensation of stiffness, which does not entirely cease until the headache has been removed by art, or has finished its natural period. As long as it is present, the hands are damp and cold, the pulse is languid, but neither quicker nor slower than is natural."

Complications of head symptoms with vomiting in indigestion occasionally display, in the following remarkable manner, the force of sympathy between the head and stomach. Vomiting, with severe pain in the head, is sometimes relieved, when nothing else will relieve it, by cold applied to the forehead.

Of the symptomatic effects of indigestion that are felt upon the chest, the commonest are cough, dry, ringing, a stomach-cough, which the ear recognizes, which often goes with heartburn, and appears provoked by it; or again, cough coming on in the morning upon rising, with considerable expectoration of thick mucus, ending in transient nausea. The more alarming symptoms are disturbance of the action of the heart, which is often irregular, intermitting, seeming to stop with a suffocating sensation, or to beating hurriedly with violent palpitation. All the feelings which go with organic disease of the heart may depend on indigestion. And, on the other hand, organic disease of the heart will often go on for an indefinite time, producing none or the slightest symptoms, being sometimes for years not progressive, but strictly stationary.*

* The patient, whose case is adverted to in page 8, with epilepsy, and a pulse varying between 21 and 29 per minute, has likewise slight valvular disease of the heart. A bellows-sound is heard with the ventricular systole. This has not increased for months. His condition, which to his feelings is perfect health, bids fair to be permanent.

The treatment of these symptoms cannot be separated from the treatment of the indigestion which occasions them, except thus far. When the action of an organ is set wrong, it sometimes continues to go wrong merely from habit. So when an indigestion is getting better, there will remain nervous irregularity of the heart's action, that some trivial remedy may allay. Thus, when the patient wakes at night with uneasy sensations at the heart, and the slight physical alarm which these produce, he will probably experience relief from such a draught as the following:—half a drachm of tincture of henbane, or of tincture of hops, with fifteen drops of sal volatile, in hot water or in camphor julep. If there is acidity present, five or ten grains of carbonate of magnesia or of soda should be added.

The most remarkable case of chest-affection dependent on indigestion which has come to my knowledge is the following.

A gentleman, forty-seven years of age, of great strength of mind and body, but who had lived not freely only, but immoderately, and who was accustomed to, and disregarded, the common results of intemperance, became at length the subject of peculiar seizures, which attacked him on waking during the night, and in the morning. They used to begin with a tickling sensation about the chest, and a feeling of lightness and cheerfulness; then

a sense of constriction supervened, amounting rapidly to pain; it seemed as if the chest was strictly bandaged, then as if the ribs were pinched together by red-hot screws; the agony being now intense, he suffered, in addition, pain at the wrists, and his hands were numb and powerless. The whole of the attack would occupy three or four minutes; the pain appears to have been frightful; and the patient was left for some time exhausted to the last degree. He recovered his health upon a total change of diet, taking no wine or fermented liquor of any kind, or animal food; but eating for dinner, pudding hot with cinnamon, and for breakfast, and in the evening, taking tea only, with bread and butter and ginger. This patient consulted me when he had pursued this system, which had cured him of the attacks above described, so long a time that it had reduced him to a state of debility, and threatened to originate a new form of dyspepsia. Upon resuming ordinary and wholesome diet, by my advice, he completely recovered his health.

Chapter II.

MANAGEMENT OF THE BOWELS.

When the food has been converted into chyme by the action of the gastric juice, it passes from the stomach into the small intestines. There the chyme becomes penetrated by the bile and other fluids; after which mixture it gradually separates into two parts; one of which, the chyle, is immediately absorbed by the lacteal vessels, and carried into the blood; while the remainder is propelled onwards into the great intestines, to be thence, after some additional changes of less importance, and some further absorption of its elements, finally eliminated. Such is, in brief, the ordinary theory of the functions of the bowels. It assumes, the reader will observe, that our food consists of two parts, recrementitious matter, and refuse. But a doubt may be raised whether this distinction is invariable and essential; or, rather it is most probable that it is not so. Under some circumstances, there is every reason to believe that all the food taken becomes nutriment. When, for example, one is in habits of strong exercise, and eating, at the same time, sparingly, and of whole-

some and digestible food alone, it is presumable that the whole of many meals is assimilated.

When we inquire for rules as to the management of the function of the bowels, it becomes evident that in what concerns recrement and nutrition, there is room for none. When the stomach has digested, and the chyme has reached the bowels, the nutriment which it contains is, without our control or knowledge, absorbed and conveyed into the circulation. Rules of management only apply to the getting rid of the refuse part. The importance of this point, however, merges in one of greater consequence. The same channel which provides an escape for the accidental quantity of refuse in the food (whether less or greater, from the food having been sparing or in excess, digestible or indigestible,) gives vent simultaneously to new secretions. It is to be understood that the alimentary canal forms a sort of inward skin, or has a membranous lining continuous with the outer skin, which pours out its own secretions, as the outer skin pours out perspiration. And as there are special occasions when the flow of perspiration from the external surface relieves and lightens the body, so are there others, when secretion from the mucous lining of the intestine tends to a parallel purpose. Or we are no doubt to suppose that one use of the intestinal secretions is to dilute the refuse matter passing down, and to cause to separate from it addi-

tional nutriment; but it is additionally certain that another object is obtained by these secretions, the cleansing, namely, or purifying the blood of the matter so discharged. And it is probable that unless our food is indigestible or immoderate, the elimination of that part of the fæces which is new secretion is of much more importance to the œconomy than the expulsion of the refuse of the ingesta.

It is moreover probable that the larger part of the fæces is new secretion, not refuse food. Whence it is that, in different individuals, the quantity of fæces does not bear an uniform proportion to the quantity of ingesta. Another circumstance determines this proportion;—which is the disposition in the individual to pour out intestinal secretion, which varies in different persons, just as the same function of the skin varies; there are some who perspire readily and profusely, and others who never display sensible perspiration; so are there some to whom large alvine discharges are natural, others to whom they are not so. The blood has, through one vent or another, to get rid of the noxious elements which accumulate in it in the changing flow of the circulation; that vent may be the skin, the kidneys, the bowels, almost vicariously.

In proportion as the fæces consist of intestinal secretion, is their increased quantity capable on the one hand of relieving the system, on the other of

lowering it. Suppressed perspiration leads to various kinds of illness, so likewise the suppression of this function. Excessive perspiration debilitates, much greater debility is produced by excessive action of the bowels. And both upon the same principle; the blood in the one case is not cleared and strained of impurities, on the other, too much material is abstracted from it.

Consistently with, or following out these views, it will be found to be generally true, that persons with natural looseness of the bowels are of less stamina than those who are habitually costive. And the management of the bowels becomes of the greatest moment; as in it are the readiest and least exceptionable, and most scientific means of altering the quantity and chemical nature of the blood, and of reducing the bodily strength. Both of these objects have continually to be aimed at in medicine and surgery.

There is a collateral ground upon which the management of the intestinal secretions is of a value hardly less than the preceding. All the organs of the body are wonderfully linked together by sympathetic influences. So that one cannot be disturbed without the others being in some degree affected; and often, when several are deranged, a wholesome action excited in one will draw the others into health; so Dr. Currie found in the general disorder of many functions ushering in continued

fever,—the temperature raised above the natural standard, the skin hot and dry, the tongue furred, the digestion suppressed, the pulse frequent, the brain excited,—that by a strong and forcible change impressed on *one* of these functions, all the rest were, as it were, pulled right simultaneously: the cold affusions, which he employed, lowered the temperature of the body, and the other functions fell into their natural rule and order sympathetically, and at once. But the sympathies of the bowels seem to ramify through, and search the whole system; and there is hardly a local complaint, or catenation of general disorder, but is, to a certain extent, drawn towards health, by the judicious exhibition of medicines that act upon the bowels.

Section I.—Of Loose Bowels.

Habitual looseness of the bowels,—their action being repeated, for example, two or three times in the twenty-four hours,—although not commonly met with in persons of the most enduring frames and hardest fibre, is yet consistent with the enjoyment of good health, and the attainment of great age. It has this advantage,—it prevents plethora, and confers some exemption from acute inflammatory illnesses. In general, those who are fat, and persons of a highly nervous temperament, even when thin and spare, have loose bowels. Persons

of both these classes are less capable than others of strong and sustained mental or bodily exertion. It is difficult to contend against nature, but such persons act judiciously, when they try to improve their temperament and habit of body; to which nothing more contributes than moderation in diet, and abstemiousness in liquids, and liquid food.

Habitual looseness of the bowels is not common in children, but many persons, from the age of twenty upwards, fall into it. Through some accidental influence their health goes wrong, and the disturbance of the system tells upon the mucous lining of the intestine, rendering it prætern-aturally irritable. The disorder shows itself in increased secretion, frequent loose motions, sometimes consisting of mucus alone, sometimes of liquid fæcal matter: there is sometimes a general sense of uneasiness in the belly; in other cases local pain, which comes and goes, but recurs about the same spot, often joined with tenderness on pressure. In this condition, fluctuating between worse and better, a patient may continue for weeks, and months, and years, unless judiciously treated. The ailment is peculiarly liable to be made worse through atmospheric influences, and by the action of the mind; any strong mental exertions or emotions are sure to increase it; it, therefore, in a remarkable degree, interferes with, and sets a check upon, a life of energetic

thought and action, converting a person otherwise in health, and fitted for strong and busy occupation, into a desponding valetudinarian. The management of such cases turns upon the following principles. Every error of diet must be avoided; the stomach is commonly sound, and capable of digesting wholesome and moderate food; fruit, much vegetable of any kind, all raw vegetables, and acids, porter likewise, and ale and cider, are to be shunned; but wine, either Madeira or sherry, taken to the quantity of two or three glasses, is generally found to strengthen without heating the irritable bowels. Of medicines, tonics, especially preparations of iron, the lighter astringents, and opium given in small doses, and with caution, are often serviceable. All aperient medicines, especially preparations of mercury, are to be scrupulously avoided, supposing, of course, that the complaint is not complicated by other local, or by general disorder requiring the exhibition of such medicines.

The following cases may serve to exemplify different varieties of irritable bowels.

A gentleman about forty years of age described his case to me thus: he had been for three years liable to some ailment of his bowels. His appetite and digestion are tolerably good; but he suffers for weeks together a sense of general inward soreness of the belly; when this is at the worst, he passes mucus from the bowels several times in

the day. The complaint is attended with loss of strength, indisposition to exertion, depression of spirits. It seems connected with the state of the skin, and is more influenced by the weather than by any other cause. In warm summer weather, with southerly and westerly winds, the skin acts, he perspires, and he is well or materially better. When an easterly wind sets in, his skin is parched, and all his symptoms recur.

A gentleman, now forty-three years of age, of a sanguine-nervous temperament, enjoyed good health till twenty. At that period he was attacked twice or thrice with inflammation of the eyes, for which he was much purged and bled. This treatment, he thought, weakened him, and gave origin to pains and uneasiness in the bowels, and looseness, which became habitual. Between the ages of twenty-eight and thirty-two, he travelled on the Continent, and enjoyed better health; the irritable state of the bowels left him, and he re-acquired strength. Near the time of his return, however, the complaint re-appeared, brought on, as he thought, by eating fruit, and drinking light wines. He now became engaged in London in the profession of the law, and being much in court, and his mind anxious about his profession, his ailment gained ground. He was at the worst in the summer of 1833. Joined to frequent purgings, sometimes with mucus, and even blood, on

two or three occasions, he experienced acute and exhausting pain in the belly below the navel, which part was sore on pressure; he became extremely weak, and the alvine discharges used to be followed by faintness. He was then on the circuit: medical assistance being called in, leeches were applied to the belly, but he thought this remedy further weakened him; hot fomentations were then used alone, and he took some doses of laudanum; after some days, he became better again. On his subsequent return to London, he placed himself under the care of an eminent physician, and consecutively, but at intervals, under two others, who taking different views of his case, treated him thus. The first prescribed calomel, which materially increased the complaint. The second prescribed a course of blue-pill, which appeared to the patient to do him harm, but to agree with him better than the calomel. The third physician prescribed carbonate of iron, which was of considerable benefit to the patient, checked in some degree the habitual looseness, and improved his strength; as the efficacy of the remedy diminished with use, its dose was greatly increased; at the same time, sulphate of copper with opium was used in conjunction with the iron, and the disorder was certainly checked; but new sensations of uneasiness began in the belly, which felt full, and loaded, and uncomfortable, and the patient became appre-

hensive of the effects of the quantity of mineral substance he was daily introducing into his inside. He discontinued these medicines, therefore, and then applied to me for advice. I recommended him to try vegetable astringents; and prescribed half a drachm of tincture of catechu, with six drops of laudanum, in a light bitter, to be taken twice a day. The system seemed to agree with him, and in a fortnight he was considerably better, having lost all the uneasiness of the belly, and the looseness only troubling him on days of more than usual anxiety and business, and always being checked by an additional dose of the astringent. It is a year and a half since this gentleman first consulted me. He has gone on for this period with the same medicines; the bitter only having been occasionally changed; and when he has been exhausted by unusual professional labour, ten, or twenty, or thirty drops more of tincture of catechu having been added, and two or three of laudanum to each draught. On one occasion, for a few weeks, I added as a tonic a daily dose of carbonate of iron, which seemed of use; on another occasion, I prescribed with opium, the sulphate of quinine, but it disagreed. He now retains very good health on the condition of taking the astringent draught twice a day; and has completely recovered his strength and capability of exertion.

About three months ago I saw, at the request of

Mr. Marshall, of Greek Street, a person who had laboured under looseness of the bowels for two years. It had commenced without any assignable cause; he had daily several yeasty motions; and from a large stout man had become extenuated, and his legs were dropsical; during the last six months, the complaint had gone on increasing; the remedies ordinarily employed in diarrhœa had been used without success. A parallel treatment to that employed in the last case entirely corrected in a few weeks the disordered state of his bowels.

The following case of chronic looseness of the bowels presented a different character to the preceding.

Colonel ———, aged about fifty, consulted me last winter for these symptoms. He was liable to attacks of swelling and fulness of the lower intestine, attended with discharge of blood; these were occasional only; but he suffered inconvenience daily from looseness of the bowels, which acted not only in the morning once or twice, and again perhaps at night, but in the middle of the day, so as to incommode and interfere with his usual avocations. He was otherwise in strong health, of large person, inclining to plethora. The ailment of which he complained had originated in India, where he had served many years; and there his health had been uninterrupted, owing, as he most likely justly argued, to the habitual looseness

of his bowels, which had been moved two or three times a day, with occasional discharges of blood. He was desirous, now that there was no further occasion for this relief of his system, to get rid of what had become a very troublesome affection. He tried, at my recommendation, some plans of which the first were fruitless; these consisted in the daily use of active aperient medicine; then in the use of the same with an opiate injection after the bowels had been freely moved in the morning; then reduction of diet and wine; the inconvenience still continued; I then advised him to try the hot air bath, and to carry off, by profuse perspirations, which his habit could well sustain, the secretions which he had to spare. This remedy was completely successful at the time; and he has not applied to me since.

Acute attacks of looseness of the bowels, or of diarrhœa, are very common in this country at the beginning of autumn, and are often incurred at every season of the year. Two causes serve to produce them, one, unwholesome food, such as fish or fruit when they disagree, and exposure to cold.

Acute purging ordinarily takes one of the following forms in this country. Simple diarrhœa, febrile diarrhœa, diarrhœa with absence of bile, diarrhœa with excess of bile or cholera.

Simple diarrhœa begins with one or two loose motions without pain; then frequent watery but

perfectly fæcal motions, with griping, and flatulence, and tenesmus; the tongue is furred, the relish for food impaired, and the patient is languid and indisposed to exertion. Such an attack, left to itself, will often terminate in twenty-four or thirty-six hours, and occurring in a very full habit, and not being severe, should not be hastily stopped. In others, it is desirable to arrest simple diarrhœa early, for its continuance only weakens. It is a common error that the continuance of diarrhœa shows that there is some irritant in the intestines, which nature is trying to dislodge. In ninety-nine cases out of a hundred, this is certainly not the case. When the disorder originates in this cause, the offending matter is early in the attack expelled, and nothing remains but the irritated mucous membrane, which continues to pour out immense quantities of watery secretion. Nevertheless this rule is not without occasional exceptions; and violent watery purging has been cured even by an emetic, that has acted by dislodging an offending substance from the stomach. In children again, it is generally right (and often all that is necessary,) in an attack of looseness of the bowels, to clear out the inside by an aperient dose, of which a powder consisting of chalk and mercury, soda and rhubarb, is the most useful form, to be repeated twice or three times, if requisite, or to be followed by some cordial and slightly astringent medicine.

The management of simple diarrhœa involves two things; nothing is to be done or taken which has a tendency further to excite the bowels; and the medicines used should be calculated to allay their heightened sensibility, and repress the inordinate secretion. The patient, to fulfil the first indication, should remain at home and at rest, and should take no food. To fulfil the second, nothing is better than to begin with two drachms of compound tincture of rhubarb in peppermint water; and then every succeeding three hours to take six drachms of chalk mixture and the same quantity of peppermint or cinnamon water, with five, ten, or fifteen drops of laudanum; or an ounce of infusion of cloves, and half an ounce of the chalk mixture, with ten grains of opiate confection. The diarrhœa will commonly abate after two such doses, which may, however, be continued if necessary. When the purging is attended with tenesmus, that is, with painful straining, an injection should be administered (and repeated if necessary) of twenty, thirty, or forty drops of laudanum in a teacup of tepid gruel or barley-water, or mucilage of starch.

When diarrhœa sets in with shivering and fever, it requires to be treated with a lighter hand; first because it cannot be certain which is symptomatic, which primary, the diarrhœa or the fever; secondly, because if the complaint is febrile diarrhœa only,

the fever would be liable to be heightened by the remedies before prescribed.

Rest in bed, and entire abstinence from food, are the first remedies, and essential; with this an effervescing saline draught, with five grains of carbonate of soda in excess, and three grains of Dover's powder, to be repeated every four hours; often, two grains of blue-pill twice a day are a judicious addition to this treatment.

That form of diarrhœa which is characterized by the absence of bile is known by the white clayey appearance of the first semifluid motions, and the appearance, like chalk and water, of those which follow; the motions have likewise a peculiar and offensive fœtor. The appropriate remedy for this attack, in addition to rest and abstinence, is mercury with opium. Three grains of blue-pill, or of chalk and mercury, with seven grains of opiate confection, made into two pills, to be taken every three hours, will at once control the excessive secretion, and bring back in a few hours the deficient flow of bile.

When looseness, which has commenced in either of the modes described, persists, what is principally to be apprehended is, ulceration of the mucous lining of the bowels. In the obstinate purging of certain fevers, of the last stages of consumption, in protracted dysentery, this change of structure is invariably present; and it is liable to occur in

such cases as I am now considering. The remedies which are now appropriate are the strong mineral astringents, lunar caustic, or blue vitriol; of either of which half a grain, with a like quantity of opium, should be taken twice or three times a day. Of the two, the former is perhaps preferable; of the efficacy of which I happened very lately to see a notable instance in an old Frenchman of broken constitution, who was in the Middlesex Hospital for local sloughing, when diarrhœa supervened, that resisted every other means.

The indigenous cholera of this country is characterized by purging of bile, frequently accompanied with vomiting of bile, cramps of the legs and belly, and considerable depression of strength. The things to be done are, to abstain from food, from mercury, and aperient medicine; to calm the stomach by perfect bodily stillness, by small quantities (half a wine-glass) of soda-water, with eight or ten drops of laudanum in it, given in the intervals of vomiting, by an opiate liniment or plaister applied over the stomach; the only object is to tranquillize. When there is great depression, æther, ammonia, and brandy are necessary,—often at the commencement of the attack.

I will conclude this section with some remarks on the treatment of Asiatic cholera, of which malady the following are the symptoms; after

diarrhœa, or sometimes no premonitory symptoms having occurred, sudden vomiting of the contents of the stomach without nausea, and sudden purging without pain; the vomiting and purging frequently recurring, the liquid discharged being like rice-water or gruel. With this, spasms of the muscles of the extremities and belly. In a short time, from one to three or four hours, collapse supervenes; urine is not secreted; the pulse is extinguished; the eyes are sunk; the eyelids are surrounded by a dark circle; the voice is hardly audible; the tongue is cold; the skin cold and passively shrunk, with a dirty look, or livid and blueish, particularly on the extremities; cramps of the limbs constant; the vomiting and purging cease, and life.

In this tremendous malady, everything that has hitherto been extensively tried, appears to have failed. And the general disposition of medical practitioners is to fall back upon that which may be considered the rational treatment of the disease, namely, repeated doses of calomel and opium; calomel to excite bile, opium to allay the heightened irritability of the intestines. The saline treatment which Dr. Stevens introduced is scientific, but has proved nugatory; and the injection of hot salt and water in the veins (however wonderful in its temporary effects,) has not been successful enough to authorize much reliance on this danger-

ous experiment upon the living œconomy. But there are other remedies, which however little they promise, certainly deserve to be more fully investigated. These are, lunar caustic with opium, oil of croton, cold affusions; the two first to stimulate the stomach and intestines to healthy action, the third to excite general reaction. It is obvious that these remedies should be tried separately. Some partial success, which each of these means has had, furnishes sufficient ground for recommending their further trial. It is probable, however, that in its worst forms, the appalling antithesis which Magendie used in describing Asiatic cholera, conveys no exaggeration: "It begins," said he, "where other diseases end—in DEATH."

SECTION II.—CONSTIPATION OF THE BOWELS.

BY constipation is meant, deficient action of the bowels, in consequence either of suppression or diminution of the alvine secretions, or of sluggishness of the muscular structure of the intestinal tube, or of both these causes united.

With most persons the bowels are usually relieved once a day, either on rising or after breakfast, the impulse to this function being increased pressure on the lower bowels through the change of posture on getting up, or through the distension of the stomach by the first meal. But as there

are some whose bowels are naturally disposed to act more than once in the twenty-four hours, so are there others to whom nature suggests one motion only in two or three days, or even at longer intervals. These peculiarities of constitution have to be carefully distinguished from the results of bad management of, or inattention to the right performance of the excretory function. For it would be not less injurious to health, though in a different manner, to force one of naturally slow bowels to daily evacuations, than to allow a person with the usual tendencies this way to pass several days without the natural relief.

There are circumstances, again, that produce temporary constipation, which cannot be considered unhealthy. After purging, whether from medicine or otherwise, the bowels are usually confined for a day or two; nor is it necessary to take means to obviate this. In travelling, costiveness is commonly experienced; here, however, it is often connected with a slight disposition towards feverishness; it is, therefore, prudent, when on a journey, to be moderate in diet. With many a sea-voyage produces continued constipation of the bowels, which is not found inconsistent with perfect health. Violent exercise again, especially if systematically continued, as in training, has an effect of the same kind; in the latter case, the superfluities of the body are carried off by another channel.

As a general observation, it is certain that a disposition to costiveness goes with physical strength. And this is easily accounted for; there is so much the less drain upon the system. But there are instances in which costiveness is associated with weakness; yet in which it is not only salutary and natural, but irremediable. In these cases, the suppression of alvine discharge depends upon organic feebleness of the bowels; which instead of having their proper strength and fabric, are, as it is found upon dissection, thin and structurally weak.

I attended a young person, a few months before her death, for what her friends were obstinate in supposing obstruction from local disease of the lower bowel. A year before, she had had scarlet fever, which left her debilitated, and liable to an occasional spasmodic difficulty of swallowing. She was very tall, thin, and extenuated, and weak; food went against her, so that she took scarcely any; once in a week or ten days, she passed a minute quantity of dark green fæces. Dr. Merriman afterwards saw this patient. She died, after having gradually wasted to the utmost degree of emaciation. On the inspection of the body, no appearance of disease was found, but the intestines were remarkably *thin*.

The following case exemplifies similar features, namely, irremediable inability of the bowels to secrete, united with general weakness of the frame,

not leading, however, as in the former instance, to a fatal atrophy, but allowing a permanent state of subdued health and strength, varied from time to time with alarming indisposition, of which the source is the suppressed intestinal function.

I was requested to see a young medical man, who, I heard, was in a fit. I found him lying on the floor, sensible, but exhausted with suffering; the flexor muscles of the limbs, and the muscles of the abdomen, were in strong spasmodic action. He had been in this state for several hours. Ammonia, and hot brandy and water were given him, and he gradually rallied. This, I learnt, was not the first seizure of the kind which he had experienced. Attacks of a similar description, but of less severity, would come on several times in the year; they were preceded by obstinate costiveness. This patient, now twenty-eight years of age, up to the age of fifteen, enjoyed excellent health. At that age, his bowels fell into the state of costiveness, which has continued since. He grew up of a slight and delicate frame, physically incapable of much bodily exertion, and indisposed to it by a languor and drowsiness which probably arose from the imperfect action of the bowels. The bowels now act once in five or six days only; what is then passed is healthy; it is only extraordinarily deficient in quantity. With this he has little appetite; and even that he is afraid of indulging, lest it should

lead to one of the attacks which I have described. These attacks, it has been mentioned, occur when the bowels have been confined for an unusually long period. The belly then becomes hard, and a little swollen; there is sickness, but nothing is thrown up but what has recently been taken into the stomach. There is a sense of uneasiness and pain above the navel. When at the close of such an attack, the bowels are relieved, the motions which pass are still extremely scanty.

There are other cases, equally rare with those which I have now cited, but of greater interest on account of the probable recovery of the patient, in which costiveness occurs in connexion with weakness and want of nutrition, from functional, and temporary, yet salutary inactivity of the bowels. The patient, either after illness, or without anything to lead to it, falls into a state of declining strength, yet no evidence of inward disease can be detected. The bowels, however, are habitually confined, and the motions scanty and insufficient. In cases of this description, the prescriptive practice is to combine invigorating diet and tonics with aperient medicine. The patient, however, instead of thriving upon this system, is liable to become weaker; but recovers when the bowels are left to themselves, and nature is allowed to recruit herself in her own way.

Ordinary cases of constipation, those in which

the affection is prejudicial to health, and require to be remedied by medical interference, differ among each other, as they depend or not upon an assignable cause, in the extent to which they derange the health, in their specially affecting this or that function, as they amount to complete or incomplete suppression of secretion, as they bear a chronic form, or threaten the invasion of acute disease, as they occur in infancy and youth, in middle life, in age.

The commonest form of constipation is that which results from inattention to regular times of relieving the bowels. Men of literary pursuits are naturally more prone to this error of self-management than practical men. All the personal habits of the latter are necessarily more methodical. So every variety of general and local disorder of the stomach and bowels is more prevalent among the former. When costiveness proceeds from this cause in persons who live temperately, and take sufficient exercise, its usual consequences are one or other of the local affections of the lower bowels, which will be afterwards treated of.

A common source of costiveness is neglect of exercise. The circulation, in such cases, becomes loaded, the bowels torpid, the tongue furred, the appetite impaired, the patient suffers depression of spirits, a clouded intellect, headach, habitual drowsiness and heaviness, and indisposition to exertion.

Want of bile is a frequent source of costiveness. This itself may proceed from neglect of exercise. But there are persons to whom disorder of the liver is the certain result of any departure from wholesome habits; of these, some, which I have already exemplified, suffer by profuse biliary secretion; others by deficiency of bile. In the latter case, the motions are clay-coloured, adhesive, and the bowels sluggish and inactive from want of the stimulus the bile affords.

Those who have resided long in hot climates are liable to costiveness from deranged biliary secretion. They experience languor, depression, uncertain spirits, uncertain appetite and digestion, joined with a furred and white tongue, uneasiness about the belly, flatulence, irregular bowels, with evacuations always scanty, sometimes firm and clayey, at other times loose, and like pitch. Nothing can be more uncertain than their state of health. When the weather is dry, and not too cold, they are often perfectly well, their spirits cheerful, their digestion good; on the same occasions, their bowels act wholesomely. But in damp weather, especially combined with cold, they rise in the morning unrefreshed, depressed in mind, without appetite, with a sense of weight, pain, and uneasiness about the belly, sometimes with nausea, the bowels deranged as abovementioned. After dinner, the system is temporarily recruited; the next day, the

same sufferings recur. The remarkable influence of calomel and a regular course of aperient medicine, evinces, in such cases, that the disorder turns upon deficient alvine and biliary secretion.

Costiveness again occurs as a natural consequence of disease of the brain or spinal marrow. In children threatened with water in the head, in deranged persons, in those whose spine is affected, this symptom is a characteristic feature. The following is a striking example of the third case. I was consulted in the case of a young lady, one of whose symptoms was obstinate constipation of the bowels, requiring her to take daily from twenty to thirty grains of the compound extract of colocynth. She had been ill four years, and her sufferings had commenced with some pain across the belly, and costiveness. After a fortnight's illness the constipation yielded; but one leg became feeble, and the knee of that side was frequently spasmodically bent. This complication of palsy and spasms soon after affected the other leg; afterwards one hand became feeble and contracted. These symptoms grew upon her; but she retained a remarkably fine complexion, and had the appearance, as she lay on the sofa, from which she could not move herself, of perfect health. The vertebral column was perfectly straight and even; but she often experienced pain at the lower part of the dorsal portion, and pressure there gave her uneasiness. This circum-

stance, coupled with the other symptoms, led me to recommend that issues should be made at the lower part of the back. The remedy was followed by considerable relief. The legs seemed less weak, the knees were not so frequently nor so painfully contracted, and the bowels acted with half the usual dose of drastic purgatives. But the improvement was temporary; and, disappointed of obtaining permanent relief, this patient consulted other surgeons. She died six months afterwards. On examining the spinal cord, it was found softened for the length of two inches towards the lumbar end.

That obscure affection of the nervous system which is called hysteria, is often productive of obstinate confinement of the bowels. Costiveness, again, is liable to be caused by the water we drink, and the air we breathe. Chalybeate waters have this property generally, and a newly-painted house acts on some in the same manner. Frequently, however, there is no assignable cause for this disorder. The patient only knows that his habit of body has become confined, and begins sooner or later to experience some of the consequent evils.

Nothing is more capricious than the agency of costive bowels on the body generally. With some, the least deficiency of the customary relief produces sensible alteration of the health; with others, total constipation for days leaves the bodily sensations undisturbed. Yet it may be affirmed, that

with the exception of certain alterations of structure, such as the various forms of cancer, there is no local or general ailment which may not be produced by constipation. The organs which most commonly suffer through this cause are, the stomach, the lower intestine, the head;—indigestion in all its forms, every disease of the rectum, headach, hypochondriasis, fulness of the cerebral vessels, palsy, apoplexy, are often direct consequences of confined bowels.

Constipation may be complete or incomplete, and if the latter, may exist in every degree. When complete, or nearly so, in some cases it will continue for weeks, producing very slight disturbance of the system, a little headach, and loss of appetite, perhaps, and having come on gradually, will gradually and unaccountably go away, seemingly having been little influenced by remedies. When incomplete, it may be temporary, and occur occasionally only; or it may be troublesome for years, or perpetually recur as the commonest feature of a life of ailment and disorder.

That which gives the most serious complexion to confined bowels is, that the symptom may proceed from another cause than costiveness. There may be no lack of intestinal secretion, no general inability of the bowels to propel their contents, but still there may be no passage. Obstruction in one of its numerous forms may be present; and

that which seemed at first costiveness, may soon upon the rising of other symptoms, upon pain, tenderness of the belly, vomiting, supervening, take a more alarming and different character. Into these cases I do not enter on the present occasion; I have endeavoured to point out all their varieties in my "Outlines of Pathology"; here I only advert to this branching of the subject, and the alliance of obstruction of the bowels with constipation. The latter, however, as I shall have occasion further on to exemplify, sometimes leads directly to the former; one cause of obstruction consisting in accumulation of fæces in the great intestine.

Viewed in reference to different periods of life, costiveness may be represented as common in infancy, and as then deserving prompt attention and correction from its relation to hydrocephalus; as common again in childhood, when still the same suspicion is to be entertained; common in youth again; in general, however, as of less consequence in youth, and easily set right; often again in youth encouraged by neglect and inattention; and in young women dependent upon hysteria. Constipation in middle age is commonly not serious in degree, but enough to impair the health, and contribute to a train of slight ailments that are directly attributable to insufficient alvine secretion. In old age, the complaint either

assumes a different character, often running into complete retention of masses of fæces in the intestine, which, weak and sluggish, is no longer stimulated by their presence to expel them; or re-assumes its original importance in relation to the circulation in the brain, leading to fulness of the vessels of the head, and cerebral effusion.

The treatment of costiveness, as it may be inferred from what has been already said, is a point of no small consequence in medicine and surgery; so many and so various are the conditions of the bodily health with which costiveness combines, and so many and so different the means of correcting it appropriate to different cases; so important often the consequences of neglecting this ailment; yet so important at times to disregard and permit its continuance; so important, on many other occasions, to use the principal means that are calculated to correct this complaint, when it does not exist. Or costiveness is commonly obviated by aperient medicine; but aperient medicine is of not less value in numerous cases when the bowels are not costive. Or it may be more just to say that there are states of the system, in which the ordinary action of the bowels is, relatively to the relief required for health, constipation, in which health is maintained or restored by systematic purging. It has proved a very profitable vein of quackery to employ this principle under a disguise, and to vend

medicines, that are merely purgative, as a panacea for every complaint. The success of the imposition has turned upon this principle; when the system is out of order, and there is no failure of stamina, in three cases out of four it is only necessary to purge, that is to say, to excite great increase of action in this one secretory organ, and the disorders of the rest subside.

I cannot better describe the treatment of constipation than by enumerating the different means which are available in it, and to explain what case each is appropriate to.

It should, however, be observed, to begin with, that, independently of the cases already mentioned, where costiveness is directly salutary, and in persons of average health, constipation of the bowels occasionally supervening without sensibly impairing the health had often better not be interfered with at all. In trifling ailments, Time is the great physician. Health is never stationary, but has its natural ebbs and flows; and in the wholesomest state of the œconomy, there are intervals of a lower condition of the bodily functions, from which it is best to wait their spontaneous recovery.

Where costiveness proceeds from known causes, the means of removing it are of course evident. If this ailment has supervened on neglect of bodily exercise, bodily exercise should be resumed

to cure it. For the strong, an hour's walking or riding before breakfast is not only most salutary, but is likewise compatible with most occupations and professions. For persons of less strength,—for women generally,—exercise in the afternoon is preferable; the same is requisite in addition to morning exercise for the strong. So a late hour of dining, in summer, seven o'clock, for instance, is a wholesome arrangement, allowing from ten to five for business, and leisure for exercise after it.

Where costiveness is joined with inattention to regular times of relieving the bowels, it will often cease upon observing regular habits in this respect.

The disposition to costive bowels may often be obviated by using articles of food which are laxative. Fruit generally has this effect; but all fruit is not equally good for the purpose. The best are grapes, currants, strawberries, raspberries, gooseberries, eaten at breakfast. Next, peaches, nectarines, pears, apples, which may be conveniently eaten at luncheon. Fruit is less wholesome after dinner; but fruit tarts at dinner are free from objection. Cherries and plums can be eaten with least safety; they are liable to purge. Currants again, which are otherwise excellent, with some produce heat of the lower intestine, and hemorrhoids by their seeds lodging there. All fruit likewise, as nature intended, is best used for a season only; the wholesomest when pursued too long,

will disagree either with the stomach or bowels. A gentleman, eighty years of age, whom I have frequently attended, of a very hale constitution, has costive bowels, which in the early part of the summer he finds easily manageable by eating fruit, principally currants. One day in the middle of August in the present year, he had eaten currants with his breakfast; the bowels had acted properly, when in the forenoon, with no previous warning, he dropped down in a state of insensibility; he continued insensible for half an hour; then vomited a quantity of half-digested currants, and soon completely recovered, no indisposition beyond languor and some weakness being left.

Vegetables are generally laxative; many find brown bread answer the same purpose. When they agree, these are unobjectionable means. But both are liable to produce heartburn and flatulence.

The next means we may consider are such as are purely mechanical. Those in whom fæces are formed in adequate quantity, but are not voided through sluggishness of the muscular structure of the bowel, or because there is not liquid enough, often obtain perfect relief by the use of injections of water. The water should be used cold, to be more stimulating; to render it still more so, half a teaspoonful of salt may be added. The quantity ordinarily requisite is a pint. It is sometimes of course proper to use warm water. Many persons

who are temperate livers, and of sedentary habits, find the daily use of such an injection half an hour before the customary time of relieving the bowels, sufficient to obviate troublesome costiveness, and to cure the local complaints it has produced. But this remedy does not answer with all. In some, it produces uneasiness and a sense of weight and dragging from the loins, with general lassitude. In others, the bowel becomes relaxed, and a disposition to protrusion is formed through it. Nor is the practice of injections wholly free from more serious accidents. I have known the intestine torn, and the gravest consequences ensue, through inexpertness in the use of the instrument. The tube of the apparatus is generally made so long and sharp, that it is easily capable of tearing and lacerating; properly it should not exceed an inch and a half in length, and should end in a smooth sphere, half an inch in diameter, tapering to a neck a third of an inch thick.

It is possible that galvanic electricity will in time be made use of to promote the relief of the bowels.

A gentleman had been under the care of the most eminent physicians in England and Ireland for an obstinate state of the bowels, which was originally ascribed to having slept in a newly-painted room. From being of a full habit, he became greatly emaciated, and the complaint went

on in this manner for two years. Dr. Cheyne then recommended galvanism, which in about three weeks restored the natural action of the bowels, and he soon recovered perfect health.

An American has a patent for a short bougie, which forms a voltaic pile. I cannot say that where it has been tried by my advice, it has been successful.

Cold-bathing, either the plunge or shower-bath, is an important indirect means of obviating costiveness, where it forms part of hysteria. The hot-bath is of great use in cases which present an acuter character, threatening obstruction.

These serve occasionally. But the means of obviating costiveness most commonly to be resorted to, consist in the use of purgative medicines. The classes of cases to which they particularly apply are those in which the intestinal secretions are not formed in wholesome quantity. But they are sometimes in addition the only resource in cases of the other class. These remedies may be enumerated under the heads of laxatives, drastic purgatives, mercurials.

As laxatives, any of the following medicines may be safely tried, but generally one form is found to suit each case better than another.

It is to be observed that aperient medicine may be taken either in the afternoon or at night, or in the morning early, and that there are circumstances which render in different cases either plan prefer-

able. In persons who are liable to suffer with indigestive pain at night, it is as well that the bowels should be habitually relieved before retiring to rest. For this purpose, two or three grains of compound extract of colocynth, taken in the afternoon, or at tea, are often sufficient. Or a short time before dinner may be taken, in two pills, two grains of extract of chamomile, five of extract of rhubarb, one of carbonate of soda.

To produce relief of the bowels in the morning, there may be taken at bed-time either a spoonful of the lenitive electuary; or, in two pills, three or four grains of compound extract of colocynth and soap, of each equal parts; or three grains of aloes, and five grains of extract of rhubarb. It is sometimes necessary to warm these laxative medicines, which else produce uneasy sensations in the bowels, flatulence, and griping; for this purpose a grain of ginger, or half a drop of the essential oil of cloves or caraways may be added. With some two or three grains of extract of hyoscyamus render the action of laxative medicines more pleasant.

With some, to whom aperient medicine is necessary, it answers better to have the inside quiet during the night, and in the morning to administer the dose, which may consist either of a drachm of Epsom salts, and two drachms of tincture of rhubarb in peppermint-water, or in infusion of roses; or of one to two drachms of Cheltenham salts in half

a tumbler of spring water; or (to combine a tonic) equal parts of infusion of senna and orange-peel, with half a drachm of Epsom or Rochelle salt, and five grains of carbonate of soda; or using the effervescent form, of two drachms of Rochelle salt, with two scruples of carbonate of soda in half a pint of water, five and thirty grains of tartaric acid being stirred into it immediately before taking.

The occasions on which laxative medicines are resorted to are mostly these. Every one living the artificial life of cities, occasionally finds himself out of order, he has lost his usual appetite, his tongue is furred on rising, and he is disposed to expectorate tenacious mucus with a sense of nausea leading to retching; the bowels are confined or irregular;—one or two doses of aperient medicine remove the indisposition. Many suffer from local diseases of the lower intestine, which are aggravated by costiveness, and relieved or cured by the use of aperients. Those again who have met with bodily injuries, fractures of the limbs, for instance, requiring absolute rest, fall into costiveness, and then into heat and fever, unless protected by laxative medicine. Finally, in almost all chronic, and in many acute ailments, manifest improvement follows upon slightly increasing the natural action of the bowels.

Drastic purgatives are required by some, when aperients suffice for others. Otherwise their com-

mon use is not to obviate costiveness, but to lower and reduce (when reduction is necessary,) by the quantity of secretion they carry off. So in many inflammatory disorders, purging is of the greatest utility. As a drastic purgative in costiveness, gamboge, scammony, jalap, compound extract of colocynth, with Castile soap, of each two grains, to be taken at night, form an useful combination; it is better the following morning to administer a saline aperient draught. Castor oil, four to six drachms for an adult, is one of the easiest medicines of this class; but it does not agree with the bilious, and with many is apt to heat the lower intestine; to children and infants it is very salutary. The oil of croton is invaluable in cases of protracted costiveness that have resisted other means; such are often met with in aged persons, sometimes in middle life; a drop in a bread-pill repeated every three hours, will seldom fail to accomplish the desired object.

Mercury is of great but partial use in removing constipation. There are many who cannot bear the action of this drug, in whom a single dose will produce the greatest languor and depression, or violent bilious disorder, or headach and sickness, or even salivation. The inquiry should, therefore, always be made before mercury is prescribed, whether it is known to disagree with the patient. There are others, again, whom mercury always suits; whom it serves as the best alterative, the best aperient,

and, indirectly, the best tonic. Nor is it possible to tell, beforehand, with whom this remedy will agree or disagree; but to scrofulous persons, and to the highly bilious, with the nervous, and to persons with weak stomachs, it should be prescribed with caution.

The preparation of mercury used will often make a great difference; those whom a grain or two of calomel would lower and distress, are often set right of slight indigestion or costiveness, by two or three grains of chalk and mercury or blue-pill, alone, or joined with three or four grains of extract of henbane, or of rhubarb. These gentler doses are often of the greatest use to scrofulous children, whom more active mercurialization would greatly injure. On the other hand, some children are lowered by chalk and mercury, with whom calomel agrees. Calomel in general agrees with children (and in such should be usually given when purgation is required) who have a disposition to water in the head; it commonly again answers remarkably well in the chronic impairment of the stomach and bowels produced by residence in hot climates; and is the first medicine to be thought of in all cases where there is a deficiency of biliary secretion. The agency of medicine is seldom satisfactorily traced; but mercury unquestionably acts on the nervous system, on the heart, on the mouth and salivary glands, on the skin, on the liver, on the

bowels. Upon the liver, however, I believe that mercury acts indirectly; and that as regards this organ, its influence is derived from its causing bile to accumulate in the blood. When there is more bile in the blood than natural, one of two events in time must follow; either more bile must escape by the liver, or the body will be jaundiced. But it is practically found that a moderate increase of the quantity of bile in the blood commonly leads to the first result, and forces a passage for itself out of the liver instead of into the tissue of other organs. Consistently with this view, I believe that mild cases of jaundice are benefited by mercury, while severer ones are much aggravated.

Chapter III.

LOCAL AFFECTIONS OF THE LOWER BOWEL.

The lower extremity of the alimentary canal, the straight intestine, or *rectum*, is the seat of a variety of troublesome complaints, the disposition to which originates in the following causes. Above this organ are placed masses of bowels, the circulation in which forms one great system, having its most dependent part here. The blood, therefore, gravitates to the rectum, whenever the body is upright, so that, under the most favourable circumstances, the hemorrhoidal* veins are exposed to more strain and pressure than most other veins. And when it is recollected that cold, passions of the mind, irregularities in diet, tend to throw the blood inwards upon the bowels, it will easily be understood that there may often be congestion enough of these vessels to determine local swellings, inflammations, effusions. The main channel, again, for the return of the blood from the bowels, is through the liver, and it is hardly too much to say, that every disturbance of the function of that organ acts as an impediment

* The veins of the rectum are called hemorrhoidal, from their disposition to bleed.

to the passage of the blood through it, and tends in the same degree to increase the congestion of the vessels of the lower bowel. In addition, the sensibility of this part of the canal, the acrid nature of its contents, the peculiar muscular structure with which it terminates,—all contribute to heighten its liability to disease, while its situation exposes it to several kinds of mechanical injury.

There are, however, rules, deducible from these same considerations, the observance of which tends materially to prevent the occurrence of many of the troublesome complaints which are to form the subject of the present chapter.

I. Abstemiousness in diet and temperance, recommendable on every other ground, are essential on this,—inasmuch as their neglect gorges the vessels of the bowels with blood, the effects of which are, as it has been explained, most felt at the lowest part.

II. Adequate means (of which the various kinds have been described in the preceding chapter) should be taken to prevent costiveness, which is productive of local disease here;—first, by causing general fulness of the abdominal system of vessels;—secondly, by the muscular pressure against the return of blood by the hemorrhoidal veins to which it leads.

III. The lower bowel should not be allowed to remain for any time unrelieved of its contents;

but this can only be secured by causing the contents of the upper intestines to descend to the lower bowel at a convenient time. There is but one way of accomplishing this object, which is through the influence of habit on the inward organs. If the lower bowel is relieved daily at the same hour, the upper intestines will bring their contents to the rectum towards that hour.

IV. Every time the bowels are relieved, ample washing with soap and water is to be practised, so as completely to purify the part. This rule, which is one of common cleanliness, is sufficient of itself to prevent half the more trivial ailments about the rectum.

The disorders which are incurred through neglect of these rules, or by original imperfection, or tendency to disease, or casual injury, will be considered under the following heads. Fulness of the hemorrhoidal vessels and hemorrhage; piles and excrescences; prolapsus, or protrusion and inversion of the bowel; fissure of the mucous membrane; spasm and contraction of the orifice; stricture of the rectum; obstruction of the passage of the bowel by its contents; want of perforation at birth; laceration of the bowel; abscess and fistula; cancer.

Section I.—Fulness of the Hemorrhoidal Vessels and Bleeding.

These disorders require to be considered together, as they generally go together, the second being commonly at once the effect and the natural relief of the first. They often, however, occur separately, —that is to say, congestion of the vessels of the rectum is not, necessarily, followed by bleeding; and, on the other hand, bleeding from the rectum is not necessarily preceded by symptoms of local vascular turgescence. So, it is desirable to look at the subject in three points of view, and to consider separately, hemorrhoidal congestion, hemorrhoidal congestion with bleeding, and bleeding from other causes*.

1. Any cause whatsoever that disturbs the body or mind, is liable to produce the first affection, which, however, is most commonly to be traced to errors of diet, neglect of aperient medicine and exercise, or exposure to cold. But without any assignable cause, this complaint often makes its appearance.

The symptoms of hemorrhoidal congestion are sensations of weight, aching, fulness, heat at the

* I pass over the consideration of hemorrhage from ulceration in fever, in phthisis, from the action of poisons, from cancer or ulceration of the rectum, from local injuries.

fundament; the aching pain sometimes extends to the loins, and round the lower part of the belly, sometimes down one or both thighs. The local uneasiness is increased, when the bowels act. These symptoms supervene gradually, are at their height in twenty-four hours, and remain troublesome two, three, or four days; then gradually wear off. The proximate cause of these symptoms is local determination of blood, or something approaching towards inflammation. The vessels are turgid, the part hot, as in an inflammation, and there is a disposition to local swelling from effusion of the serum of the blood and lymph.

The means which relieve an attack of this kind are the following:—rest, and that in the recumbent posture; abstinence from wine and heating food; laxative medicine, such as one or two drachms of lenitive electuary, an ounce and a-half of infusion of rhubarb with three drachms of manna and a drachm of tartrate of potass, or a Seidlitz powder, the local application of cold or warm water, whichsoever being tried gives the most ease. Generally cold applications are preferable. If the pain is very severe, leeches are to be applied.

2. Congestion, with bleeding, is the addition of that symptom to those which have been described. The bleeding is, in some cases, to a certain degree accidental,—that is to say, it sometimes only takes place upon the action of the bowels, that is to

say, when the strain upon the turgid hemorrhoidal vessels is increased, and the mucous surface is compressed. If the bleeding is inconsiderable in quantity, the fact of its occurrence does not modify the treatment of the complaint. However, it is less often necessary to apply leeches, where there is spontaneous bleeding; and cold applications are, in this case, essentially preferable to warm.

Congestion with hemorrhage sometimes puts on the character of an acute febrile attack. The patient experiences shiverings, followed by pain in the loins, and symptomatic fever, which, after a few hours, is relieved by a copious discharge of blood from the rectum. Such attacks are not frequent, and their nature is seldom ascertained before the critical hemorrhage occurs, which relieves them.

The proper treatment antecedently to the hemorrhage, is the local application of leeches, and saline aperient medicine.

Congestion with hemorrhage ofter recurs to a slight extent, lasting two or three days, whenever the system is overcharged and disordered. The complaint has then the use of clearing the system, and probably often averts some other attack, and is so far salutary. It is not, however, by any means safe to rely on this mode of relief, and to calculate upon so compounding for a course of indulgence. The same congestion, which leads to

salutary bleeding, is liable, at the same time, to lead to structural disease. Occasional hemorrhage from the bowel, if moderate, is least to be interfered with in persons who have spit blood, or have shown a disposition towards apoplexy.

3. The cases in which the hemorrhage is out of all proportion to the local congestion and is the only local symptom which presents itself, are of more consequence than those yet adverted to.

The quantity of blood which is sometimes thus lost is enormous: four pints have been passed in a few hours: a pint daily for a month: these are, of course, extreme and rare cases: but to a less, though highly prejudicial extent, such hemorrhages are common, producing an exsanguinated appearance, weakness, swelling of the legs, palpitation of the heart, headach, faintness, vertigo, extreme nervousness, spasmodic difficulty of swallowing, and the whole train of such symptoms.

The source of these great bleedings is the same as of the lesser: there is no rupture of vessels; the blood transudes through their coats, and pours from the whole surface, but commonly from some points more than from others. It is just the same in bleeding from the lungs, or from the nose. No vessel is torn, but the blood passes freely through the thin membranous tubes, which ought to contain it. Such bleedings, again, are in part only local ailments; the blood, indeed, finds vent at one part

in preference to another, but that which makes it flow at all, is some general influence, and the place of the hemorrhage is comparatively accidental. Accordingly, in the most remarkable cases of the class, the discharge of blood from one part of the general inward mucous surface will sometimes cease, and commence upon another: after hemorrhage from the bowel has ceased, bleedings from the nose will supervene: these may be alternate with vomitings of blood: these, again, with spitting of blood from the lungs. All these ceasing, the patient may have apoplexy.

But of these different constitutional hemorrhagies that from the bowel is the least locally injurious and troublesome. Blood poured out in the brain causes cerebral apoplexy; in the lungs, pulmonary apoplexy; in the stomach, vomiting and disturbed digestion; from the bowel it passes away leaving no consequences. In such cases, therefore, it becomes a question, whether any attempt should be made to suppress the flow of blood, or whether pains should not rather be taken to keep up, or even to restore, this comparatively innocuous vent.

There are instances, in which great judgment is required to determine which course is to be pursued. When the habit is full, and the disposition to hemorrhage strongly marked, for the time the hemorrhoidal discharge may require to be encouraged. Generally, however, this is not the case;

but the two objects may be pursued together,—of suppressing the flow of blood, and of correcting the plethoric condition of the body.

There are two means by which hemorrhage from the rectum may be stopped. The first is applicable to all cases, in which it is safe to attempt to arrest the bleeding; it consists in the use of cold, and local styptics. These are applied in the following ways:—by daily injection of cold water, or of a few ounces of infusion of catechu, or of the same, with five to ten grains of sulphate of zinc, or of a strong solution of alum. Astringent injections are not to be used in a greater quantity than five or six ounces; the best time for their application is before rising, when they are retained longer. Or a suppository of Ward's paste and soap, in equal parts, may be introduced into the rectum at night, or a drachm of the same medicine may be swallowed in pills, two or three times a day.

A gentleman, who has consulted me, has formerly spit blood, and is now liable, on very slight occasions, to pass blood from the bowel: he labours under slight habitual protrusion of the lining membrane when the bowels act: this, if roughly treated, always bleeds: he, therefore, never uses, after an evacuation, any means but free washing with alum-water, and in this way obviates the daily recurrence of hemorrhage.

The blood which flows from the rectum is of a

bright scarlet colour: in some cases of protrusion it may be *seen* to exude from the vascular mucous surface. It often appears to flow from one or two points more than the rest, and spins out freely as if from a ruptured vessel. This has led surgeons, in some cases, to apply a ligature to the bleeding point; nor wholly without advantage, when the patient is becoming daily weaker through loss of blood. For a few days afterwards the bleeding does not return, owing to the slight inflammatory action which supervenes till the ligatures are thrown off.

In general, when there is a strong disposition to hemorrhage from the rectum, any mechanical cause will excite it,—the fæces firmer than natural, any common irritant used as a local application, and the like; and, on the other hand, the use of drastic or smart aperient medicine.

Nevertheless, cases of hemorrhage from the bowel are occasionally met with, unattended with local heat, not excessive in quantity, and in persons of a strong and rigid fibre, where the only successful treatment is repeated active purging.

It is needless to add, after what has been said, that those in whom an habitual or periodical hemorrhage from the bowel has been stopped, require to observe the greatest caution as to moderation in diet, use of aperient medicine, and the

like,—to prevent the circulation becoming overloaded, and the occurrence of hemorrhage in more important organs.

Section II.—Of Piles.

Piles are soft tumours, generally round, sometimes flattened, sometimes with a broad base, sometimes attached by a neck, varying from the size of a pea to that of a French walnut, which form within the lower intestine, and at or about its orifice.

Sometimes they are situated entirely without the bowel, and are covered by the common integument; these are called *outward piles*, or *skin piles*.

When they form within the bowel above the sphincter muscle, they are of course entirely covered by mucous membrane; these are called *inward*, or *intestinal piles*. They are liable to be forced down when the bowels are relieved, so as to protrude externally; but their appearance is so different from that of outward piles, and their place of attachment and origin is so easily determinable by examination, that it is hardly possible to mistake the one for the other. They are soft, with more or less firmness, and red, blue, or brown in colour, under different circumstances.

Sometimes piles are situated exactly at the margin of the intestine, and are wholly without

the sphincter, or nearly so, forming swellings with this peculiarity, that they are half covered with mucous membrane, half with skin. These are marginal or *anal* piles; they are sometimes confounded with inward piles.

These swellings, whatever situation they occupy, consist of the following elements; first, of a growth or production of skin or mucous membrane, which forms their covering; secondly, of a growth of the minute vessels, which goes with the growth of the flap of mucous membrane or integument; thirdly, of dilated veins, which are partly produced, like varicose veins of the legs, by the pressure of the column of venous blood in the intestines, partly by the local increase of vascularity; fourthly, of inflammatory products, lymph or serum, which infiltrate the tissue of the flap of skin or mucous membrane, giving to it more or less firmness. Piles in different cases present one or other of these elements more prominently than the rest. Some are merely little pendulous flaps, others have the highest vascularity in addition, others with some thickness are soft, and are blue with dilated veins, others again are of a firm consistence, whitish if external, brown if internal, from effused lymph or serum.

Piles generally occur in persons who are liable to the attacks of vascular fulness already described, which are thence often miscalled attacks of piles.

But the piles are generally there before the attack, although they swell and become larger during the attack; they continue for a time swollen after the increased heat and pain have subsided; they then gradually become less full and tense, and remain not more sensible than the surrounding parts.

Piles have been divided into bleeding piles, and such as do not bleed; the bleeding, however, has little to do specifically with the piles. If they are external, they do not bleed, (for blood most rarely transudes through the skin;) if they are internal, they bleed only in connexion with the disposition to bleed common to the adjacent mucous surface.

Or the tumours called piles bear the following relation to the congestion described in the preceding section. They sometimes arise from it; when they already exist they participate in it, and are the principal seat of the pain; and they probably render the attacks of congestion more frequent than they otherwise would be.

The progress of this complaint presents several varieties. Or this is common to each sort; the lump which forms the pile may come either suddenly or gradually; its condition is always fluctuating, sometimes more uneasiness being present than at other times; but the alternations with the attacks of pain are often remissions only, and there is constantly present greater or less uneasiness. In other cases, and these by far the most frequent,

there are intervals of entire absence of pain, in which the lump, now less than before, has not more sensibility than the neighbouring parts; finally, the lump may continue for a lifetime; or may disappear by suppuration, forming a small abscess; or, what is more common, may waste, losing its firmness and interior hardness by absorption, and becoming only a thin flap of skin or mucous membrane, with no disposition to pain or action of any kind.

I shall describe the three varieties of piles separately.

External piles are little lumps, generally oblong, and more elevated than thick (resembling, for instance, in shape, the seed of a lupin adhering by its concave edge), and from that size, to the magnitude of an inch in length, half an inch or more in height, and the same in breadth. They are laid generally laterally to the orifice of the bowel. Sometimes there is one only, more commonly there are two or three. Sometimes they are flatter. They are covered by the common integument, of which they have the colour. In their quietest state they are soft flaps of skin and membrane, having common sensibility; when angry, they are firm, hard, and exquisitely painful.

There are several modes of treating external piles. When they are unattended with pain, the best way is to leave them alone, only scrupulously

using soap and water after each action of the bowels, as the irregularity of the surface makes it otherwise probable that some impurity would remain, and it is certain that nothing contributes to the growth of these tumours more than this cause. It is unnecessary to repeat that the greatest attention should be paid to the action of the bowels. When the swellings are painful by fits only, and this often happens for two or three days together, unfitting the patient for his customary avocations, the best way by far is to remove them by an operation, which is painful indeed, but is over in a moment. They should not be removed by the ligature, which is slow as well as painful, having to act upon a fold of skin; but they should be taken off with scissors, or with the knife. The part has then to be poulticed for two or three days, during which the patient should remain in the recumbent posture. If the patient has not nerve enough to submit to the momentary but severe pain, the next best thing is to apply pressure. This may be made by means of a metal cylinder, like a ruler, an inch and a half in diameter, on which the patient is to habituate himself to sit. At first the pressure is painful; but use renders it less so, and the tumours often waste under it. When the pain arising from outward piles is constant and severe,—and it sometimes will continue incessantly for months,—the same plan, with cooling lotions, or cold water fre-

quently applied, is still available. But it is far better in such a case to remove the tumours at once. The operation is not followed by bleeding; nor have I known any bad consequences arise, but, on the contrary, complete and almost immediate relief, when the swellings have been cut off in their most angry stage.

Sometimes crops of arborescent warts grow from the circumference of the anus; these are sore and painful, and can never be perfectly cleansed. The attempt to destroy these with caustic or the ligature, is seldom more than partially successful; they should be taken off with scissors or with the knife, and the trifling bleeding stopped by the application of lunar caustic.

Anal piles, or those which are situated exactly at the termination of the intestine, are more troublesome than the preceding kind, and they present several varieties, between which it is very important to distinguish.

The character common to each variety is this, that it is situated on one side of, and exactly at the margin of the orifice of the bowel, so that it has one part towards the cavity of the bowel, and covered with mucous membrane, the other half being outward, and covered by the common integument.

Anal piles vary in magnitude from that of a pea to that of a chestnut. The larger they are,

the more painful they are found to be, for this reason: when they acquire any size, the internal part is within the grasp of the sphincter muscle, the pressure of which causes constant uneasiness.

In their quiescent state anal piles are little folds or puckers at the external border of the sphincter, where the mucous lining of the bowel is continuous with the skin; they have little or no hardness, and no sensibility; and in this state are best left alone, care being taken to keep the action of the bowels regular, and to use frequent ablution with a lotion of cold soap and water, two or three times a day.

When this kind or the preceding are attended with troublesome itching, saturnine applications may be used; but I have seen most relief obtained from an ointment consisting of an ounce of lard, and two drachms of oxide of bismuth.

In their angry state, marginal piles present the following appearances.

The tumour is sometimes a little hard blue knob, bigger than a pea, which is moveable, very tender on pressure, with a constant feeling of stiffness and aching in the part; or both the same sensations; two or three hard blue knobs appear set round the margin of the intestine.

The pain and tenseness of these blue tumours lead one to expect that they would be relieved by puncturing with a lancet. This, however, is not

the case. They are exquisitely sensible; puncturing them gives great pain, and increases the heat and aching of the part. Rest, cold lotions, or warm poulticing (as either is found to be more soothing), laxative medicine, leeches, if required by the severity of the pain, are the proper means of relieving such an attack; the common period of which is three to five days. The swellings at length becoming free from pain gradually subside to the state of flaps or puckers.

In this chronic state, they admit of, and require indeed, another and different treatment. They require treatment, from their disposition to fill again, and give renewed pain for a few days. Advantage should be taken of their chronic and indolent state to endeavour to disperse them.

The means for this purpose are local astringents and pressure. The best local astringents are nut-gall applied in an ointment, a drachm of nut-gall to an ounce of lard, or spermaceti ointment with ten or twenty drops of liquor plumbi to the ounce, or alum-water. To make pressure, the patient should either sit upon a metal cylinder as before described, or should use a short rectum bougie.

Another kind of anal pile is a lump about the size of a chestnut, occupying one side of the aperture of the intestine. It is not very prominent either towards the cavity of the bowel, or externally, but feels of this size and shape when examined. It is

tense, elastic, tender on pressure, and when at the worst, is the seat of constant aching and heat, with occasional throbbing. Rest, abstinence, laxative medicine, are the first remedies to be prescribed in this kind of attack, which often comes on very suddenly. As the tension of the part is considerable, warm poultices are more soothing than cold applications. Abstraction of blood by leeches gives relief, but not to the same extent as in the cases already described.

Such a swelling is occasionally mistaken for what it is not; and it is liable to be considered an inward pile, that has been extruded from within the sphincter, and which would be relieved by being forcibly pressed back. Such an operation, however, would necessarily fail of any good result, while it would produce a serious increase of pain. A patient who consulted me for an anal pile of this description, had been told that by this means, if he could bear the pain, he would obtain relief. Luckily the remedy was not tried. I recommended the means already specified, rest, abstinence, laxative medicine, poulticing, and the tumour became softer, lessened, and finally dispersed.

Such a swelling bears a nearer resemblance to an abscess, from which it is occasionally impossible to distinguish it. There is a firm, elastic, heated, painful, and throbbing lump; it may be a pile consisting of dilated and turgid veins, and effused

lymph, or matter may be forming in it. Supposing this doubt to exist, the best practice is still to poultice the part for twelve hours, unless the pain is very urgent and intolerable. In the latter case, the tumour had better at once be punctured with a lancet. The operation will give relief in either alternative. If there is matter, it is the best practice; and may prevent the formation of a fistula. If there is not matter, the puncture gives vent to clots of blood, which turn out of an inflamed vein, or out of the cellular tissue. The tension is thus removed, and the part being poulticed, the pain quickly subsides.

I believe that the pain of these swellings would always be relieved, and that they would always disappear sooner, if they were punctured. But there is a serious objection to doing this, unless the pain renders it necessary. The punctured wound is liable to bleed troublesomely. I attended, with Mr. Beck of Lambeth, a gentleman under these circumstances. A large and painful anal pile had been punctured, and a small clot of blood had escaped from it; but the wound continued to bleed, or the part to fill with blood, which came away partly clotted, partly fluid. This continuing, the patient was so weakened, that he fainted on the night-chair. Examining the part, I found that the hemorrhage was not venous, but proceeded from an artery which had been

divided by the lancet; the vessel was tied, and the bleeding ceased.

Inward piles are pendulous tumours, which appear to grow from the inner surface of the bowel above the sphincter. They commonly are situated near the orifice; or in that situation alone do they produce symptoms, and give trouble. These, when swollen, are forced out at each action of the bowels; when shrunk and quiescent, they are not so protruded, and are not felt by the patient.

As it has been explained, these tumours are growths of the mucous membrane, retaining more or less of its natural vascularity, and expanded, as a more or less tense sac, over some dilated veins and effused lymph. But, at first, these tumours are often folds of mucous membrane only; and when it has happened that they have been distended with veins and lymph, the veins will again often shrink, and the lymph be absorbed, when the pendulous flap of mucous membrane alone is left again. So the essential character of these tumours is, that they are constituted of little bags of the lining membrane of the bowel formed above the sphincter, liable to be more or less vascular, to be more or less distended with turgid veins and interstitial lymph, and to be at times forced from within the cavity of the bowel to protrude externally.

These folds of the lining membrane of the intestine I have seen assume the following different characters.

Sometimes they are of a florid red colour, soft, with very slight thickening, being enlarged folds of the lining membrane, which are forced out at each motion, and require some pressure to replace them. They have no increased sensibility, and give no pain; but they are troublesome from the care and time required in replacing them, and from the mucus which flows from them, and which continually escapes from the bowel, and from their disposition to bleed.

In other and more common instances, they project, as one or more pendulous tumours, soft, but of some thickness and substance, of a dark red colour, the mucous surface very little changed from the natural appearance. This is the ordinary appearance of inward piles when they are in a tumid and painful state. In the intervals they shrink.

In other instances the tumour, thin, long, and pendulous, appears as if the contents of the part adherent to the intestine had been absorbed, so that a soft, red, vascular knob is projected from the bowel, with a thin peduncle of less vascularity, an inch or more in length, which carries its vessels.

In other cases, the tumour is firm and hard, and mahogany-coloured, the mucous membrane being stretched over a mass of lymph and compressed

vessels, forming a round tumour from half an inch to an inch and a half in diameter; the tumour protruding each time that the bowels act; the pain and uneasiness it occasions being extremely variable.

Each of the preceding varieties which I have described, deserves to be considered separately, in reference to its chronic and habitual state.

The first is frequently called prolapsus of the lining of the bowel; but it is more than mere protrusion: it is protrusion with growth and elongation, and has much more affinity to other cases of inward piles than to true prolapsus. It is generally attended with little pain, but there is a troublesome discharge of mucus, sometimes of blood, and it is some time after an evacuation before the folds are returned. There are two modes of treating this complaint; one is by astringents, the other by the ligature. The first is necessarily palliative only. To give instances of both.

A gentleman, whose case I have before adverted to, formerly spit blood, and is now liable to occasional attacks of congestion of and bleeding from the bowel. Whenever the bowels act, a circular fold of vascular membrane protrudes, which, if roughly touched, bleeds. His constant practice is then to bathe it with alum-water till it returns; and I do not think that any further treatment would be judicious in this case.

A gentleman under forty years of age, who had passed several years in India, applied to me for advice for these symptoms. Every time the bowels acted, two or three small folds of mucous membrane were extruded; they were intensely vascular, not only red, but covered with visible dilated vessels. It took time to return the protrusion, which however, neither bled nor was painful, but there was a constant discharge of mucus. He had tried cold and astringents, and various medicines, ineffectually. I therefore recommended him to have the principal folds removed by the ligature. The operation was attended with very little pain, and proved completely successful.

The second kind which I have enumerated, thickened and vascular piles, preserving the usual florid colour and surface of the mucous lining of the intestine, seldom require removal by the ligature. These are the kind most frequently met with. In their quiescent state, they have very little sensibility, and they are disposed to shrink and waste under proper treatment. This consists in the use of laxatives and astringents; a drachm of precipitated sulphur, or of lenitive electuary taken at night, a drachm of Ward's paste taken twice during the day, with moderation in diet, will, in most instances, cause these tumours to waste and shrink, and become mere pendulous slips of membrane. In this case injections of cold water, half an hour

before the usual time of relieving the bowels, are again useful. If the tumour, under continued treatment, does not waste, but continues the seat of occasional aching and uneasiness, the ivory bougie recommended by the late Mr. Mackenzie may be resorted to. This instrument is an inch and a half long, having an oval head exceeding three-quarters of an inch in its transverse diameter, tapering to a neck half an inch in thickness; it rests upon a convex plate of ivory, which is pressed by a bandage against the orifice of the bowel when the bougie has been introduced. At first, the use of this instrument is painful, but it becomes less so in a little time; and the pressure it makes diminishes both the size and painfulness of the tumours. All these means failing, the tumours may be removed.

External piles should never be removed by the ligature, as the skin which forms their covering is acutely sensible; they should be removed by the knife or scissors, as there can be no danger of hemorrhage. With inward piles it is the reverse; when removed by excision, occasionally the most troublesome hemorrhage follows; when removed by the ligature, on the other hand, the pain is seldom very severe; at all events, it is never more acute than that which removal by a cutting instrument occasions.

In removing inward piles by ligature, the

following points should be attended to. If a large tumour is to be tied, it is better to pass a double ligature through its base with a needle, and to tie each half separately. And again, it is important before tying the ligature, to cut into the tumour. These precautions are necessary to allow the ligature to be drawn so tight as completely to strangulate the tumour, and to cause it at once to mortify. If the tumour is only half strangulated, the pain instead of subsiding continues till the fact is discovered, and the ligature tightened.

In this form of the complaint, if the ligature is resorted to, it is unnecessary, when there are several, to tie more than one or two of the tumours; the rest will be sure to waste. To tie more would give more pain, and lead to what sometimes follows this operation, constriction of the gut.

This operation is attended with as little danger as any operation. Still it must be borne in mind that there is some. Once in a hundred times, fatal inflammation of the membrane of the belly follows it. Nor is it possible out of many patients with the appearance of good general health, to conjecture on whom the unfortunate lot would fall; yet out of many, one or more there would be whose health is wavering, so uncertainly fixed, that this weight thrown in the adverse scale is mortal.

Removal by ligature must be considered as the best treatment for the third and fourth kinds of

inward piles which I have described. I conclude that there is less risk from the operation in those cases. The tumours have in both a character further altered from the natural structure. The operation again is so far necessary that it is the only mode of getting rid of the complaint; inasmuch, at least as far as my experience has gone, tumours of this kind do not waste, but remain permanently troublesome. All these circumstances being explained to the patient, it rests with him to decide whether he will bear the habitual inconvenience, or incur the very trifling risk attending the operation for its removal.

Looking at the varieties of inward piles in reference to their occasional changes, whether towards aggravation or otherwise, the following features present themselves.

1. They are, of course, liable to be involved in the general congestive state already described, to relieve which the recumbent posture, fomentation and poulticing, abstinence, and laxative medicine, are appropriate.

2. When in this state, they are liable to slough, which is the best thing that can happen. This change has a formidable appearance, but the sloughing does not go beyond the tumour, which it removes and cures.

3. The congestive state of piles occasionally leads to suppuration in them, when they form

little abscesses, which being opened, or bursting spontaneously, the tumour afterwards shrinks and disappears.

4. After a severe congestive attack, piles are more likely to shrink and waste, than when they are in a chronic state of uneasiness.

5. Inward piles, when of large size, and casually swollen, sometimes cannot be returned by the patient when they have protruded. In this state they cause extreme pain, and excite inflammation and fever. By gentle pressure, the surface being smeared with cold cream, a surgeon should have no difficulty in returning such a tumour. This is a case in which, the irritation of the temporary strangulation having subsided, removal by the ligature should be strongly recommended.

Section III.—Of Prolapsus.

The lower intestine is liable to protrude inverted like the finger of a glove. This may result from two causes,—either from habitual straining, that forces the bowel out of the anus, or from relaxation of the sphincter, which deprives it of the natural support.

The cases of protrusion from unusual straining are again of two kinds,—in one there is adventitious local disease: in the other, none. The principal of the adventitious local diseases referred

to, are piles, stone in the bladder, and worms. The first is not an uncommon cause of prolapsus in adults: the two last, in children. In general the prolapsus ceases when the adventitious disease is removed. If it should persist, either from the natural adhesion of the bowel to neighbouring parts being relaxed and elongated, or from dilatation of the sphincter, or from both causes united, it has to be treated by one of the methods presently to be mentioned.

The common cause of prolapsus, where there is no antecedent local disease, is costive bowels: it is then a complaint of very slow growth. At first the protrusion is hardly perceptible, and returns spontaneously, immediately after the bowels have acted; but it goes on increasing; and after some months or years, a length of four, five or six inches is extruded at every motion, to return which, some time, and the recumbent posture, and pressure, are necessary: add to which, there is a constant flow of mucus, and the bowel is liable to prolapse in walking or riding, or even on standing any length of time: and the constant exposure of the mucous membrane causes it to become sore and excoriated, and, at times, the prolapsed part will swell to a volume which it is beyond the patient's power to replace, and he lies in considerable pain till the tumour can be returned by a surgeon. Even when the quantity of intestine protruded is not great,

nor attended with much soreness or swelling, sometimes hours will pass before the patient can return the part himself. So I have known a patient, as a protection against the inconvenience of prolapsus, habituate himself to relieve the bowels once in forty-eight hours only, and that before retiring to rest, in order that, during the night, the bowel might gradually become replaced.

For different cases of this complaint the treatment must be different.

When it occurs in children (in whom it is very frequent) from costive bowels, it is generally only necessary to obviate the constipation by laxative medicine, and the disorder ceases. For this purpose, the lenitive electuary, or præcipitated sulphur, or rhubarb with magnesia, are appropriate medicines. When, the bowels having been thus regulated, the complaint persists, the daily use of an astringent injection is to be recommended. Three or four ounces of lime-water, or of infusion of catechu, or of the same, with a few grains of alum, or of sulphate of zinc, will give tone enough to the part to prevent its reprotrusion. These injections should be administered before the child gets up.

In grown-up persons, when this complaint depends on costiveness, both the cause and the effect may often be together remedied by the daily use of an injection of cold water. When this is not

sufficient, aperient medicine to regulate the bowels, with Ward's paste to stimulate the lower bowel, are the next remedies. The Ward's paste may be taken either in pills, a drachm three times a-day, or may be introduced into the rectum as a suppository made up with equal parts of soap. Or stimulating injections, if necessary, may be used.

When, through delay, the complaint has become inveterate, and several inches of the bowel habitually protrude, and the anus has become dilated from the quantity of protrusion continually down, the preceding remedies often fail to produce an effect; then the management of the case becomes mechanical, or relief is to be obtained either by the use of different instruments adapted to support the bowel, or by an operation.

The instruments for supporting the bowel are of two kinds: one is half an oval of ivory, which is pressed against the orifice of the bowel by a spring, and constantly worn, when the patient is up. The other is a similar instrument, with this important addition (so to describe Mr. Mackenzie's instrument before adverted to) of an upright projecting from the oval, an inch and a half in length, with a narrow neck, expanding into a rounded end, which may be worn in the bowel for some hours at a time. The latter, though painful at first, has this advantage,—it irritates the bowel, and

gives it tone, and gradually indisposes it to protrude. The first is rather a palliative of the complaint: the second has a greater tendency to cure it.

In looking for an example of the advantages of these methods, I do not find a better one than a case told to me, some years ago, by a gentleman with whom I have the pleasure of being acquainted, not a medical man, in a conversation about this disease.

"Some years ago I travelled with a young Russian, a fine, well-built, handsome fellow (perhaps he was a cross-breed), who was so full of spirits, that he appeared to me a man under temporary excitement from some gladdening cause, rather than one swimming in the stream of his ordinary disposition. And so it turned out. He had been afflicted with a prolapsus for several years to such a degree, that his life was a misery to him. He could not take the slightest exercise, and was obliged to recline upon a sofa almost the whole day. Every thing had been tried in vain; but one day he fell in with a gentleman, who advised him to get a ball of ivory large enough to cover the anus, and fasten it so as to keep it always in that situation. Immediately he felt the greatest relief; the sphincter by degrees recovered its elasticity; he suffered less and less by the protrusion of the gut when he went to the water-closet, and when I saw him, he was able to take strong exer-

cise without the slightest inconvenience: whereas, before the application of the ball, he could not walk across the room, without bringing on the complaint."

In place of these means, there are two operations which, in young persons, are a preferable alternative to constantly wearing an instrument.

One of these operations consists in pinching up two or three little folds of the mucous lining of the protruded intestine, on different aspects of the gut, and tying them with ligatures, causing the portions of mucous membrane to slough off, leaving little ulcers. The ligatures usually are loose in four or five days, and the ulcers commonly heal in a week. This operation causes the intestine to become temporarily thickened, and, therefore, to have less irritability, and to be less easily displaced than before, and the habit of protrusion is broken.

The other operation consists in pinching up with forceps three or four of the thin folds of skin which converge towards the orifice of the bowel, and cutting them off with scissors; the wounds heal in a few days. The effect of the operation is to narrow and to give due rigidity to the orifice of the intestine.

Both of these operations, which are directed each to a different element of the complaint, are necessary in the worst cases.

The following case, which was attended by Dr.

Chalmers of Croydon and myself, and seen in the after-illness by Dr. Arnott, will exemplify the progress and successful result of the first of the two :—

A young lady, twenty years of age, had suffered for several years with headache, torpid bowels, painful and irregular menstruation, pains in the back and legs, irritability of the bladder, hysteria. Dr. Chalmers of Croydon, who was consulted, was led to conjecture that there must be some disease of the rectum, a knowledge of which had been kept back from her family. By closely questioning his patient, he at length learned that she laboured under prolapsus ani; that a protrusion took place every time that the bowels acted; that it was of considerable volume, and that it could not be replaced without difficulty. The young lady, it appeared, had suffered from this complaint as long as she could recollect, and as she grew up, the infirmity increasing upon her became a source of perpetual misery, which a false shame prevented her disclosing. The constant fear upon her mind that the complaint would become known, had probably contributed more than the local disorder to cause the train of symptoms under which she suffered. The mass which protruded when the bowels were moved by an enema was of the size of an orange; and as the coats of the

bowel which formed it were not at all thickened, I have no doubt that the voluminous folds which came down, were an eversion of as much as six or seven inches of intestine. The sphincter ani was extremely lax: the eversion was ascertained to begin about an inch within it.

The method of treatment pursued was the following:—

A small fold of intestine was pinched up with forceps, and tied with a silk ligature; care was taken to include the mucous and submucous coats alone in the ligature: the whole surface included was less than that of a sixpence. Before finally tightening the ligature, the surface of the little fold was cut with scissors. Three such folds were tied upon opposite aspects of the bowel, and at different distances from the sphincter. The patient hardly felt the operation, so small is the sensibility of the internal parts of the body, unless when inflamed. The parts were then replaced. During the first four days which followed the operation, the patient was not allowed to sit up; and the bowels, which had been well unloaded before, were kept confined, very light and moderate liquid nourishment alone being allowed, and an enema of laudanum having been administered. Upon the fourth day, when the bowels were moved with an enema of warm water, the patient was greatly

disappointed at finding that the protrusion returned; yet she remarked that the bowel admitted of being replaced with greater ease than before. Some soreness in the part, however, was now observed; blood too was passed from the bowel; there was irritation of the bladder; and for the first time, a protrusion took place during the act of micturition.

Upon examining the bowel on the sixth day after the operation, it was found to be in the following condition. The mucous membrane, when the bowel was prolapsed, appeared darker and fuller of blood. The little portions of membrane which had been tied had come away; the ligatures, however, had not yet separated, but remained fixed in the shallow ulcers which they had produced: they were divided and removed. From this time the local complaint improved daily: the protrusion became less and less, then did not recur each time the bowels acted, and in a fortnight had entirely ceased.

A strange accident ensued in this young lady's recovery; after a few days she became deranged; but the alienation did not last many weeks, and for some time that I occasionally heard accounts of her, she enjoyed perfect health of body and mind.

There are cases of prolapsus, which result from weakness and relaxation of the sphincter of the nature of palsy; this complaint occurs either alone,

or in combination with weakness of the legs. In either case the only local remedy is the palliative one, already described, of the ivory ball and spring.

Section IV.—Of Fissure of the Rectum.

Fissure of the rectum is a small ulcer of the mucous membrane, which is liable to form immediately above the sphincter, and is met with more commonly on the back part of the intestine, than in front or laterally. The ulcer is generally oblong, a third to three-quarters of an inch in length. The edges are sometimes raised and hard; in other cases, their want of elevation and softness, and the shallowness of the ulcer, render the complaint difficult of detection.

The complaint usually originates in costive bowels, and its commencement often is a transverse rent of the mucous membrane from the pressure of hardened fæces in their expulsion. The crack so formed does not heal, but remains an ulcer.

The patient is sometimes aware at the time that some injury has taken place, from the unusual pain attending the relief of the bowels, and the soreness afterwards. In other cases the symptoms supervene gradually. They consist of pain, aching, soreness within the bowel, brought on by evacuating its contents, and remaining for a longer or shorter period, the pain being in time very severe,

and a sense of weight and uneasiness being at last always present.

The simplest treatment is often sufficient to cure this troublesome complaint. It is frequently only necessary to keep the bowels slightly relaxed, the motions semiliquid; and the ulcer will spontaneously heal, when no longer torn open daily by the passage of hardened fæces. But additional means are sometimes necessary: these are, first, the application of ointments to the sore. The best for the purpose are those which contain the milder preparations of mercury; but they require to be varied, and sometimes other applications succeed when these fail. Where there is great pain and tenderness, suppositories of opium and lard are occasionally more useful. Sometimes the application of lunar caustic, on the other hand, takes off the irritability of the ulcer.

When these means fail, the second resource is an operation, which is not of a very serious nature. It consists in dividing the sphincter *laterally;* if possible, the incision should include one part of the ulcer, but this is not necessary. The main object is to give perfect freedom to the passage from the intestine, and to take away the strain upon the part where the ulcer is. The wound is not to unite by adhesion; which may be prevented by introducing into it a pledget of lint dipped in oil, and renewing the same as often as necessary.

In one case, in which the ulcer was situated to the fore-part of the rectum, I divided the sphincter laterally, but the operation proved ineffectual. Afterwards extending the opening of the bowel, I pared off with scissors the hard edges of the ulcer, which then healed.

Section V.—Contraction of the Anus.

Contraction of the anus may be either spasmodic and temporary, the result of undue action of the sphincter muscle, or it may consist in permanent thickening and induration of the orifice of the intestine.

Spasmodic contraction of the anus is most commonly met with as a symptom of fissure of the rectum, and disappears when that complaint is cured; but sometimes it occurs as an independent disorder.

In the latter case it forms a kind of cramp, which often comes on suddenly. The patient, who has gone to bed quite well, awakes in violent pain. The sphincter muscle is hard, and in strong action, so that a small bougie cannot be introduced without difficulty. In some cases these paroxysms recur daily, in others only two or three times a-year. In some, again, the attack of spasm comes on gradually, and after producing uneasiness for several days, gradually wears off; in others, it

is sudden in its invasion, and sudden in leaving the patient.

The complaint generally depends upon a confined state of the bowels: and a brisk cathartic at night, with an aperient draught in the morning, will often be sufficient to cure it. Or the patient finds it enough to use a lavement of warm water, upon which the spasmodic contraction wears off.

When the pain is very severe, an ounce of tepid water, with twenty or thirty drops of the liquor opii sedativus, should be injected into the bowel, and at the same time some aperient medicine taken. Sometimes the spasm is relieved by extending the circular sphincter muscle, and keeping its fibres on the stretch. The patient for this purpose may introduce a large mould candle into the anus.

There are cases in which this disease produces long-continued and most serious suffering, in which the anus becomes permanently contracted and hardened, constituting a kind of permanent stricture, and generally combining both permanent and spasmodic contraction. The motions are always passed with difficulty and with pain, and all the common symptoms of stricture of the rectum are present.

In this more aggravated form, the complaint is slow to yield to the simple remedies which have been recommended; and the complicated sufferings

which the patient endures, require speedier relief. This is obtained by dividing the sphincter on one side. The incision should be as before transverse, neither forward nor backward, but *lateral.*

The wound should not be allowed to heal by adhesion, but by granulation. The effect of which is, that for several days the strain and tension of the part are completely removed; when the morbid sensibility disappears, and with it the preternatural thickening.

A sort of tic douloureux occasionally is situated at the extremity of the bowel. In some cases the paroxysm of nervous pain occurs very seldom, and is of short duration, in which case no local treatment is requisite. When the pain has been constant, and the ordinary means of allaying neuralgia have failed, it has been found serviceable to perform the operation of dividing the sphincter.

Section VI.—Of Stricture of the Rectum.

All the mucous passages in the body are liable to become constricted; the urethra, the gullet, the windpipe, the lachrymal duct, and the rest. They are narrowed through inflammatory contraction and thickening at one or more parts. But in addition to structural and permanent narrowing, those mucous canals which are surrounded with muscular fibres are liable to spasmodic stricture; that is

to say, to temporary narrowing produced by spasm of the fibres which surround them: the spasm over, the canal is of the same dimensions as before. The spasm in all these cases depends upon an irritated state of the mucous lining of the canal, which brings on by consent spasm of the surrounding muscular fibres.

To consider spasmodic stricture first.

We may begin by inquiring what part of the lower intestine is the seat of spasmodic stricture? What I have seen of the complaint disposes me to think that no single point is more liable to this affection than another. The cases, however, to which I refer, have been anything but satisfactory. They have left me with the impression that both the rectum, and the sigmoïd flexure of the colon, are liable to partial contractions of their muscular tunic, capable of obstructing the passage of the fæces, and of making resistance to the introduction of instruments. This irregular and spasmodic action generally goes with a vitiated state of the secretions; and is more frequently relieved by a regulated diet and aperient medicine, and the use of injections, than by the employment of instruments.

The symptoms which denote the existence of this complaint are, irregular action of the bowels, with a sense of difficulty in emptying the intestine, uneasiness of the lower part of the belly above the

left groin before the bowels are relieved, weight and uneasiness about the sacrum, occasional discharge of mucus, the motions sometimes natural, commonly either relaxed or in fragments,—no other disease being ascertainable.

One of the best instances which I can give of the disorder is the following: it contains a very useful lesson as to its treatment. The patient is a physician, who is now through his judicious self-management restored to perfect health. The extract which I shall quote from a letter, in which at my request he favoured me with an outline of his case, that had several times been the subject of communication with me before, will convey to the reader an idea of the suffering which may attend this kind of disorder.

"In my life," says the writer of this communication, "I never knew what it was to have a single action of the bowels without the aid of medicine, or to be free for many hours together from all the wretchedness of disorder and of remedies in conjunction, excepting for two short intervals of time, during one of which I trusted simply to the use of injections of warm water, and during the other, when I took the white mustard-seed, and that with so singular an effect, that for a while I thought I had quite got rid of my complaint. With the exception of these two intervals, I have never been able till lately to say there is in life

that which is worth living for, or in other and more proper words, I did not know what it was to wish to live. To say nothing of the medical discipline which I have undergone again and again, I have been examined and treated for stricture of the rectum and of the sigmoïd flexure of the colon for years, and for years never passed anything from my bowels larger than a horse-bean, if solid, or of the little finger, if of a softer consistence. Oftentimes have I been quite incapacitated for exertion, and never able to enter upon my professional duties with anything like alacrity or cheerfulness. It is now nearly two years ago since I came to the resolution of abandoning all remedial measures: to leave off at once physic, injections, and the bougie: to take nothing in the shape of food that could by possibility irritate the stomach or bowels, and to leave them to act of and for themselves, when they could no longer retain their contents. I had, as you may suppose, difficulties in bringing about so entire a change. At first I suffered much inconvenience from a sense of fulness in the bowels and in the head. But this I contrived to obviate by the very occasional use of an injection of warm water, determining with myself to overcome the disposition to contraction by making the contents of the lower bowels the means of dilating them. By a steady perseverance in this course of discipline, I have perfectly recovered; know nothing

now of that distress of feeling which for at least twenty years made life burdensome to me; I have seldom or ever occasion to have recourse to medicine, and then only as a man in perfect health would do. I should tell you, that at one time such was the state of the stricture in the rectum, that the largest-sized urethra-bougie alone would pass, and that at another the contraction was so far in the intestine that a bougie of three feet in length was considered necessary to reach it."

It may be instructive to place in contrast with the preceding case another, which I shall again give in the words of my patient, who describes, in the third person, his own case. In this instance the idea of abandoning medicine appears likewise to have been resorted to, but not with an equally good effect; for it led to a very serious attack of obstruction of the bowels. In this instance, again, the use of the bougie has proved salutary. There exists, however, in this patient a point at which the bowel is so constantly found narrowed, that it is more than probable that he labours under permanent stricture of the rectum, in addition to that tendency to general irregular contraction of the adjacent bowel, which constitutes spasmodic stricture.

"A gentleman, now in his fifty-eighth year, who from early youth had been subject to a very irregular action of the bowels amounting frequently

to an alternation of costiveness and dysentery, was, about fifteen years ago, strongly urged by a physician to abstain from medicine, and to let the bowels alone. This experiment was tried with great resolution. In spite of much suffering and increasing feverishness, the patient took no medicine for more than a week. Inflammation however ensued. Intolerable pain in the abdomen, and simultaneous vomiting and purging, reduced him to an alarming state in the middle of the night. Skilful medical assistance was fortunately obtained without loss of time, and the acute symptoms were subdued. The patient's general health however grew worse. His bowels were never at rest. Acrid mucus was incessantly formed, and frequently passed, leaving the sufferer in a state of great weakness. Blood was sometimes observed in the mucus. Scarcely anything was passed without great effort and pain. Spasmodic contractions of the rectum were constantly attendant on every attempt to ease it. Great emaciation and prostration of muscular power took place, as also restlessness at night, amounting sometimes to the most painful startings from sleep. After a few ineffectual attempts to perform a cure, treating the case as one of liver derangement, he confined himself to the use of the common purgatives for the paroxysms of the complaint, and of a small quantity of rhubarb and ginger before dinner, for the

daily symptoms. Though very slowly, yet he improved from year to year; but owing to the unsettled state of the bowels, he could hardly venture out of his house. By the advice of a friend, he tried, about two years ago, the daily use of lavements by means of Read's syringe. He has used nothing but tepid water. At first the lavement produced great nervous weakness; but this symptom disappeared in a short time. At present he enjoys a certain degree of comfort and ease, which entirely depends on the use of the lavement early in the morning. From a local examination, it has lately been ascertained, that the rectum is contracted to about half an inch diameter, at a distance of about five inches from its termination. The daily passing of a wax bougie, softened by heat, is attended with little or no pain. The distension of the contracted part by this mechanical means relieves the spasmodic contractions, which the patient frequently feels a little above the sigmoïd flexure."

I shall conclude my remarks upon the subject of spasmodic stricture of the rectum with the following case, which was communicated to me by Mr. Crosse of Norwich. I will give it in his own words. It is unnecessary to state, that that eminent provincial surgeon was not the practitioner through whose mismanagement the fatal termination of the case was produced.

The case is one in which the coats of the intestine were remarkably thin, which gave rise to an imperfectness in the action of the bowels (as explained at page 90,) which was erroneously considered to proceed from stricture. In every point of view this serious case is full of interest.

"A young woman of delicate frame was supposed to have stricture of the rectum, which led her medical attendant to employ in no very gentle manner a firm bougie. After much difficulty the instrument was made to pass; but the patient in a few hours became very ill, vomited, and was chilly, and in about forty-eight hours died. It was found that the bougie had perforated the coats of the bowel at the sigmoïd flexure, about seven inches from the anus, and had entered the peritoneal cavity. The preparation, which is in my collection, shows the rectum to be capacious for an inch or two next the anus; but all the rest of the bowel preserved, being a length of eight or nine inches, is very contracted, so that it would only admit a small instrument half an inch in diameter; and at the same time its coats are very delicate and attenuated, readily allowing the bougie, in the hands of a boisterous surgeon, to perforate them. There is a great abundance of adipose substance and of fatty appendages about the sigmoïd flexure of the colon. The bowel presents no thickening or partial contraction, but a smallness of calibre

generally, with remarkable delicacy and thinness of the coats—accounting for the presence of symptoms, during the life of the patient, which might have led to the supposition that stricture existed."

Permanent stricture of the rectum consists in a partial thickening of the submucous coat of the bowel and of the adjacent cellular texture; through which means a smooth ring is formed, generally from a third to half an inch in depth, which projects into and narrows the channel. Sometimes the thickening does not include the whole circle of the intestine, but a segment only. It is presumable that this thickening results from chronic inflammation.

The ordinary seat of stricture of the rectum is from two and a half to four inches from the orifice of the gut. But sometimes it occurs at a greater distance, at six to seven inches for example; and a contraction of the same nature is occasionally met with in different parts of the colon.

The symptoms of stricture of the rectum are the common and necessary consequences of the excretory canal being narrowed at one part.

The fæces are passed in small and narrow and flattened portions. The quantity voided at a time is inconsiderable, from the effort required to pass it through the stricture. The bowel being thus insufficiently relieved, the effort has to be repeated frequently during the day; and it is only after

many efforts that all its contents are passed. The narrowed portion of the canal is extremely sensible; which is owing partly to the thickening which forms it being originally produced by an inflammation, partly to the irritation of the mucous lining of the stricture, which is occasioned by the more forcible pressure of the fæces against it. When the bowels act, in addition to a sense of obstruction in the part, pain is experienced and tenesmus, and mucus is voided; and at other times a sense of weight and tightness, with general uneasiness, is felt. The habitual confinement of the bowels alternates with periods of looseness and purging. Uterine irritation, irritation of the bladder and urethra, numbness and pain down the thighs and legs, are occasionally concomitant symptoms.

But if these symptoms are common to every affection by which the channel of the rectum is narrowed, in what manner is a case in which they occur proved to be a stricture?

It has been mentioned, that the seat of stricture, in nineteen cases out of twenty, is near the orifice of the bowel; that is to say, within the distance which admits of examination by the finger. In common cases, therefore, no difficulty exists in identifying the disease: the finger may be passed into the smooth and firm narrow ring which forms

the stricture; and a demonstration may be thus obtained that this and no other disease is present.

The treatment of ordinary cases of stricture of the rectum is no less simple in theory than satisfactory in its practical results. In stricture of the rectum, as in stricture of the urethra, if a bougie of a size calculated easily to fill the stricture be passed into the narrowed part daily, or every second, third, or fourth day, according to the irritability of the patient, and retained for from ten minutes to a quarter of an hour at each introduction, the pressure of the bougie causes the absorption of the lymph, on which the inflammatory thickening of the walls of the canal depends; the patient is thus enabled gradually to introduce larger and larger instruments, and the channel is at length restored to its original calibre.

A diet carefully regulated, the use of mild aperient medicines, of injections of tepid water, and of anodyne suppositories, are important accessories in the treatment of stricture of the rectum.

In the use of instruments for contraction of the rectum, the point to be constantly the most thought of and studied is gentleness. If any considerable degree of force is used, the bowel will be torn: if pressure is made against the stricture with too large an instrument, the adjacent and sound part of the bowel is certain to give way sooner than the stric-

ture. The canal of the urethra is often torn in this manner by the pressure of an instrument too large to enter the strictured part.

In stricture again of either canal, if by dexterous management an instrument too large is successfully forced through the contracted part, it may yet produce most serious consequences. If such an instrument is forcibly passed into a stricture of the urethra, the patient in a few hours after the operation is seized with shivering, and symptomatic fever follows, which will last several days. If similar violence is done to the rectum, the surgeon being anxious rapidly to complete the dilatation of the stricture, within twenty-four hours shivering supervenes, as in the former instance: but here it has a more serious character; it is probably the precursor of peritonitis, to which the patient may in a few days fall a sacrifice. There is a singular consent between the pelvic mucous passages and the peritoneum. If a stricture either of the vagina or of the rectum be roughly dealt with, peritonitis is liable to ensue; notwithstanding that the violence is done at a part of either canal, which is not covered with peritoneum.

Such violence is not merely mischievous, but it is utterly unjustifiable on any ground: it can be used only through a mistake of the principle of dilatation; the object of which is not mechanically to stretch the narrowed canal, but to excite

by moderate pressure the absorption of that which thickens and contracts it.

Division of a stricture of the rectum has sometimes been recommended. I have done this operation upon some occasions, but my experience is not in favour of it. It is liable to produce troublesome bleeding; and what is obtained by the division must be kept open by the use of bougies, by which in nearly the same time simple dilatation might have been effected.

It is not always easy to distinguish stricture of the rectum from incipient carcinoma.

A lady about forty-five years of age had suffered severely from piles, which were removed five years ago by the ligature. It was stated to her that they did not grow from the fore-part of the rectum. Some months after this the lady began to feel a tightness and sense of obstruction in the rectum. These sensations gradually became more distressing: much effort and straining were necessary to pass the fæces, which were narrow, flattened, and in fragments. After two years of suffering, this patient applied to me for advice. There was an induration, which began two inches within the rectum, and occupied two-thirds of the circumference of the gut. The central and broadest part of the induration was towards the vagina; at this part it was two-thirds of an inch in depth. The part was acutely sensible. I recommended that the bowels should be

relieved every morning by means of a lavement of tepid water, and that a soft wax bougie should be introduced into the narrowed part every second day. Under this treatment, combined with the occasional use of aperient medicine, a decided amendment took place: the narrowed part yielded to a certain extent, and there was a proportionate alleviation of all the symptoms. But in a short period the patient became worse again; the introduction of the bougie now gave more pain; it was therefore discontinued. The passage was indeed certainly freer, but the induration towards the vagina was not lessened. Under these circumstances I wished Mr. Copeland to see the case with me. The impression which the examination made upon our minds was, that the disorder was likely to prove carcinoma.

The plan which the patient followed was slightly modified. The use of the bougie for a time was not resumed. The increased sensibility of the part went away. But it was not long before the patient again complained of the contraction returning; upon which the bougie was again used, but for a shorter period than on the first occasion. Since then at intervals the patient has occasionally had recourse to this remedy again. She is now materially better: the narrowing has lost its doubtful character: the induration is less in extent, and the projecting band has little more than the character

of a thickened fold of mucous membrane. Some discharge of matter *per vaginam* took place, and continued for several weeks, about a year ago. I am disposed to think that it proceeded from the induration, which may have suppurated, and the abscess have broken into the vagina at that time. This account was written four years ago. The lady has suffered no further inconvenience from the complaint.

Stricture of the rectum is occasionally met with in combination with a dilated sac of intestine below it. The stricture with the part above is then borne down as a sort of inward prolapsus into the lower and dilated portion of the rectum. This disease is liable to be overlooked, but when discovered, yields, like other stricture, to dilatation by means of the common wax bougie.

Stricture of the rectum is a disease of extremely rare occurrence. It is, however, a common trick of charlatanism to represent the complaint as frequent, and to put upon a course of treatment by instruments patients who have no stricture to remove. Some months ago, I saw, in consultation with Mr. Copeland, a lady of rank, who for several years preceding, had been under systematic and almost daily treatment for stricture of the rectum; the question proposed for our consideration was, whether this plan required to be continued; it turned out on examination, that there was no

ground for supposing that stricture had existed, and that in all human probability, the only complaint ever present had been functional irregularity of the action of the bowels.

Section VII. — Of Substances in the Rectum partially or completely obstructing the Passage.

As the substances which may be impacted in the rectum are of several kinds, and are derived from various sources, so the symptoms which they produce are different, and each kind requires to be considered separately. They are, first, the natural alvine contents unduly accumulated; secondly, hard intestinal concretions; thirdly, hard and indigestible substances that have been swallowed; fourthly, hard substances introduced into the rectum through the anus by design or accident.

I. Accumulations of the natural contents of the rectum in a mass too large to admit of being expelled by the efforts of the bowel, sometimes, but very rarely, take place in adults; they occur rather less unfrequently in children, but are not very uncommon in aged persons.

This ailment is liable to result in children from neglect of attention to the relief of the bowels. If the contents of the lower intestine are not expelled, some absoption of their liquid parts takes

place, the mass is thus lessened, and is rendered more solid and less stimulating, at the same time that, by an inverted action of the intestine, it is forced retrogressively along the canal.

In this manner collections of fæces, drier and firmer than natural, often disposed in little round hard fragments, or *scibalæ*, are liable to accumulate in any part of the great intestine from the rectum upwards, and to form a source of obstruction.

The symptoms which are caused by such accumulations vary in different cases. Sometimes many days pass,—a fortnight or three weeks,—without the ailment being discovered. For this period the bowels have not acted, but the child's appearance has not altered so as to attract observation. Gradually, however, he loses his appetite and colour; has headach, is sick and vomits, the belly is full, tumid, uneasy. Having learned that these symptoms have been preceded, and are attended by entire costiveness, it is best to begin with unloading the intestine by means of injections. For this purpose, warm water with soap dissolved in it, or barley water, a quart containing a table-spoonful of salt, will commonly answer.

When the lower part of the bowel has been by these means cleared, aperient medicines should be given by the mouth, to unload the upper part of the great intestine, and clear the whole passage. Further means than injections of emptying the

lower bowel are commonly unnecessary; sometimes, however, the accumulation is in so great a mass, and so solid, as to resist the entrance of liquid, and it is necessary to use a scoop in addition to the syringe, in order to loosen and dislodge the obstructing masses.

Mechanical means are required for two different cases under this head. On the one hand, the accumulation often cannot be moved from above, owing to its quantity, till that is diminished by getting rid of the lower portion of the mass. On the other hand, great collections of fragments, sufficient entirely to disorder the digestive apparatus, will accumulate in different parts of the great intestine, and yet allow daily, and even frequently, some passage to liquid secretion.

A publican, aged thirty-five, had been bed-ridden for six months. He lay supported in bed in an inclined position: if he lay down he was oppressed and uneasy; if he stood up, he vomited. He was corpulent, and ate voraciously. The bowels would act with medicine, but not without. This resulted from an accumulation in the great intestine, higher than could be reached by examination. The most powerful drastics were given, but without dislodging it. It was then advised to inject very large quantities of tepid water. After nine pints had been slowly and cautiously thrown into the intestine, an immense discharge of scibalæ took

place. The injection, but in less quantity, was repeated daily for a week, and for that period more scibalæ continued to be discharged. After the accumulation had been thus got rid of, an alterative course of medicine and regulated diet perfectly restored the health of the patient.

In elderly persons the accumulation is often not in scibalous fragments, but the intestine is filled with a mass of cohesive substance, like putty. This is probably less stimulating than ordinary fæces, and the intestine again, from age, is torpid. Elderly persons often have repeated attacks of the nature I am now describing, and after having got over two or three, sink eventually under a return. However, by constant attention to the action of the bowels, the disorder may be often prevented; and when it has decidedly recurred, it often gives way to the prompt use of drastic purgatives. It is wonderful how little inconvenience is caused to the patient by large accumulations of this description.

I attended, with Mr. Drew, of Gower street, an elderly lady, who was labouring under this complaint: the belly was large and full, but not tense or tender upon pressure. In conjunction with strong purgative medicines and purgative injections, the hot bath and venesection to the extent the pulse and her age justified, had been tried, but ineffectually. The complaint gave way, however,

under the use of oil of croton, of which she took three drops, a drop every two hours: the bowels then began to act, an immense quantity of fæcal matter was discharged, and she was restored to health. Two years afterwards this lady died of a return of the same complaint.

The following case exemplifies other features of such an attack, and the necessity of using mechanical means to unload the intestine:—

I was requested by Mr. Reid of Bloomsbury-square to see an elderly lady. She had generally enjoyed excellent health, and had been accustomed to take a good deal of exercise. But ten weeks previously she had been attacked with rheumatism, which had confined her to her bed. The bowels during this ailment gradually became inactive, and at length were never moved without medicine. The medicine which agreed best was castor oil, but even this failed to give sufficient relief. The quantity of fæces passed was small, and its expulsion caused some pain of a spasmodic character, which remained for hours afterwards. These pains occasionally came on at other times, and were accompanied with throbbing, and a sense of stoppage in the rectum. To relieve her sufferings, it was necessary to give opium, which increased the constipation. Upon examining the rectum, Mr. Reid found that it contained a quan-

tity of clayey fæces, which he removed with a scoop. Water was then injected, and more fæces were returned with it. This operation gave the patient temporary relief; but in the course of a few days the pain gradually returned, and became more intense than ever, coming on in paroxysms, especially when the bowels were moved, a thin fluid, however, being all that passed. It was at this period that I saw the patient in consultation with Mr. Reid. The accumulation of fæces in the rectum had returned in a surprising quantity; but there was great tenderness and soreness about the sphincter, which indisposed the patient to allow the trial of any further mechanical relief. However, with care and gentleness, the orifice was gradually dilated, an immense volume of fæces was brought away, and the rectum, which was unusually capacious, was at length emptied. The pain then subsided: a dose of castor oil which was administered, brought away on the following day more fæcal matter that had been accumulated above, and the relief was complete.

II. By intestinal concretions I mean such as are directly produced from substances which have been swallowed as food or medicine. Of these there are, doubtless, many that have not yet been submitted to chemical analysis. But Dr. Marcet and Dr. Wollaston examined some, which proved to be

concretions of caseous matter. Others have been composed of oat-cake. And magnesia, where taken in large doses and repeatedly, has been consolidated in the bowels into hard masses of formidable magnitude.

Such concretions being of slow increase, cause a gradual invasion of abdominal uneasiness, pain, nausea, vomiting,—finally, local irritation, when they reach the lower bowel. It is then only that their existence is positively ascertainable; when their removal is to be practised by the mechanical means which their shape and resistance render necessary. The following instance, given by a late eminent American surgeon, conveys a just idea of this form of disorder:—

A female, aged thirty-five, had been for some years subject to constipation and repeated attacks of colic; the former had increased, attended with sickness of the stomach, and the latter had become more frequent, from which she only experienced relief when her bowels were moved, a task not accomplished without great difficulty and painful efforts joined to the use of much purgative medicine. Dr. Bushe was called to visit her in one of these paroxysms. "I found her," he says, "sallow, emaciated, dejected. From the severe bearing-down pains, together with the sense of weight and fulness in the sacral region which she complained of, I was led to make an examination of the rectum,

when I found the mucous membrane slightly protruding, the sphincter excessively irritable, and a large concretion distending the pouch of the rectum. I now apprized her of the nature of the case, and the absolute necessity of removing the foreign body, to which she willingly consented. For this purpose, the patient being placed in a suitable position, I introduced a strong and long pair of lithotomy forceps, with which cautiously laying hold of the concretion, I slowly and steadily extracted it, with no more injury than slight laceration of the mucous membrane, although, on measurement, it proved to be six inches and three-quarters in circumference, and two inches and a-half in length. The bowels were then freely washed out with injections: leeches and fomentations were applied to the anus, the recumbent position was enjoined, and a speedy recovery ensued."

III. Hard and indigestible substances that have been swallowed, and have made their way down to the rectum, have been most commonly portions of bone. They generally pass through the bowels without creating disturbance, and are first suspected through the pain and irritation which they produce in the rectum. The ordinary period that they take to traverse the length of the intestinal canal is about eight days. Their extraction is a mechanical operation, in which the surgeon must be

guided by their shape, magnitude, consistence, position.

IV. Foreign substances directly introduced into the rectum, either require the same management as the cases last described, or in their introduction, produce wounds, which combine with the common features of local injuries those of laceration of the intestine.

Section VIII.—Of Defects of the Lower Bowel existing at Birth.

The lower part of the intestine is liable to malformations of various kinds, which are discovered at, or shortly after birth. Many of these admit of being completely repaired: others are irremediable.

These imperfections are referrible to three heads, —obstructions of the orifice, or in the intestine above it;—deficiency of part, or of the whole, of the rectum;—improper terminations of the rectum in other parts, of other parts in the rectum.

I. Congenital obstructions of the bowel are either partial or complete. Partial obstruction is, when the bowel is perfect everywhere but at its opening, and when that, instead of being natural, is a narrow canal, not much larger than will admit a probe, nor capable of giving passage from within to more than liquid fæces. This defect of structure is liable to escape observation for many weeks,

owing to the want of consistence of the alvine evacuations; but sooner or later,—that is to say, when the fæces become more solid,—it causes obstruction, uneasiness and distension of the belly, loss of appetite, vomitings, emaciation. As soon as the defect is discovered, it may be rectified. The method to be employed for this purpose depends upon the size of the opening. When that is not extremely small, it will often allow of dilatation by means of a sponge-tent, or conical bougie of waxed cloth. When the aperture is too closely contracted for this, it requires to be enlarged by the division of its border. The operation is unattended with danger, and is, at the same time, much less fretting and troublesome to the infant, than the more tedious process of dilating. Add to which, that the child's health may be suffering from obstruction, and prompt, as well as complete relief may be required.

When a proper aperture has been made, it is generally unnecessary to use artificial means to prevent its closing again: the passage of the contents of the bowels will probably be sufficient. The direction in which the incision is to be made, depends upon the place of the existing aperture, in relation to the bowel and to the middle line of the body. The division of parts should be very trifling in extent, as it is easily enlarged, if that should prove necessary; and the less its extent, the more

perfect afterwards will be the voluntary power of closing the intestine.

The following case may serve to exemplify many of the features of the congenital imperfection of the bowel under consideration,—its first oversight, the derangement of health produced by it, the facility and completeness with which it may be rectified.

I was requested, in the spring of the present year, to see an infant six weeks old, which had thriven for the first fortnight after birth, and then had pined and fallen away. A few days before I saw the infant, some kind of farinaceous food had been tried, after which it was noticed that the relief of the bowels was imperfect, and attended with straining and pain. On examination, it was found that the rectum opened by a very small aperture, barely large enough to admit a probe; the aperture was upon the right side, and close upon the raphe of the perinæum. On the other side of that line, and about a quarter of an inch from the aperture described, there was a shallow *cul de sac*, like another attempt to open the intestine.

Having examined the part with a probe, I introduced into the canal a button-pointed bistoury, with which I divided the integuments backwards, for the extent of half an inch. A quantity of semi-fluid fæces immediately came away; the aperture allowed the extremity of the little finger

to be introduced into the sac of the intestine, which seemed to terminate about a third of an inch from the surface. The child from this time improved rapidly, and is now strong and healthy. No dressing or plug was introduced; but on the sixth day, when the opening seemed disposed to contract, I again enlarged it to a very slight extent with the bistoury. Since then (now six months) nothing more has been necessary, the aperture remains perfectly free, yet appears to have a sufficient power of closing.

Complete obstruction of the bowel may take place either at the anus, or higher up in the intestine.

The former case is known by the absence of an external aperture, joined to a fulness and prominence where the bowel should open. The imperfection is easily remedied, by puncturing the full and prominent part, and enlarging the puncture into a crucial incision, a quarter of an inch each way. The aperture should be kept open by a pledget of oiled lint, or bougie.

When the external orifice is perfect, sometimes one, sometimes two adhesions of the bowel are met with within: these are suspected when, with a natural opening, there is no discharge of the contents of the bowel. Their existence may be ascertained by an examination of the intestine. These adhesions are said to be sometimes very

slight, and to admit of being broken through by pressure with the finger. When of a firmer consistence, constituting strong membranous septa, they require to be perforated with a trocar, and the opening cautiously dilated, or otherwise enlarged.

II. Deficiency of the rectum, partial or complete, is a more serious form of obstruction; but the first kind, in many cases, is still remediable.

When the lower part of the intestine is deficient, its place is occupied by fat and muscular fibre: often, too, the pelvis is unusually contracted. That there exists some considerable deficiency, the surgeon judges from the want of an external perforation, and of that fulness and prominence to the touch which goes with simple imperforation. Nevertheless, the length of intestine absent is necessarily a doubt: it may be greater, it may be less. Practically, there are two forms only of this case—one, in which the surgeon, under no circumstance of the infant straining and forcing, distinguishes any fulness of the perinæum: the other, in which such an impulse or greater fulness is more or less sensible. The first case is extremely unpromising: however, in both the same method must be adopted; the surgeon must try and find an extremity to the bowel.

For this purpose he is not to use a trocar, but having made a crucial incision with a lancet or

scalpel in the perinæum, where the bowel ought to have opened, he is cautiously to seek in the direction of the sacrum for a prominent sac. This can only be safely done by a process of the slowest and most cautious dissection. When at length the *cul de sac*, in which the intestine has terminated, is reached, it has to be punctured, its contents let out, and a short ivory or metal bougie left in the wound to preserve it open, to be from time to time removed to allow the contents of the intestine to escape.

How far in such an operation a surgeon should pursue the search after the terminus of the bowel, must be determined by his anatomical knowledge. He should not, however, too hastily give up the attempt, which if it fails one day, may be afterwards renewed, for two reasons. First, if the intestine cannot be found from below, there is, in my opinion, no other justifiable expedient left; and the little patient, after surviving two, three, or four months, with no evacuations, an enlarging belly, vomitings and gradual emaciation, must sink. The second, that the relief obtained by thus opening the bowel not only preserves life, but sometimes preserves with it the possession of bodily comfort, and as much capability of physical exertion and active habits as those naturally formed enjoy. To what extent this may be the case is exemplified in the following instance.

A young gentleman now in good health, and

twenty years of age, asked my advice during the past Spring for his further management of such a case in his own person. He had been born with part of the rectum deficient, and an artificial passage had been made. It had been kept open by instruments, the form of which was the following; I give the size from that which he at present uses. It is a cylinder of metal, two inches and a half in length, and something more than half an inch in diameter, one end is rounded, the other fixed to the convex surface of a short thick half cylinder. This part, when the instrument is introduced, rests and is fixed by a bandage against the hollow between the nates. The rounded end of the instrument passes into the cavity of the bowel. Or on examining the artificial passage, it is found to be upwards of two inches in length, opening at that distance into the extremity of the rectum, which is felt to have a soft, smooth, circular lip of mucous membrane; the character of this circular orifice is quite distinct from the more rigid and callous wall of the canal which leads to it. Wearing the instrument which I have described, this young gentleman has joined in all the active sports of his companions, is a bold rider, and fond of hunting, from which he does not suffer in the least. The circumstance which led him to consult me was, that having used a new instrument, which had been ill cast, and was notched and

rough at one point, it had produced considerable soreness in the part of the canal against which it had pressed. The absence of the ordinary sphincter-muscle had been of no inconvenience. The difficulty he had experienced had been in expelling, not in retaining the contents of the intestine. Even if he took aperient medicine, this difficulty was experienced; which, however, was obviated by the use of injections of warm water.

III. The third head under the subject of imperfections is the wrong termination of the rectum in other parts, or of other parts in the rectum.

The latter case is essentially irremediable; the former is not necessarily more than a complicated case of deficiency of the rectum. Suppose, for instance, the intestine to want an inch in length, and to open into the vagina or the bladder at the same part;—there is here the deficiency explained, with its appropriate remedy, under the last head, and in addition, an opening into another cavity. There are then two malformations instead of one. But the additional one renders the first more tractable. If, for instance, the intestine open into the vagina, it is much more easy to make an artificial canal to the extremity of the intestine than without this means of directing the incision. The first step to be taken is to cut such a new canal, and to gain for it proper dimensions and permanency by metal cylinders kept constantly in it. When this

has been accomplished, it remains to close the original false aperture by sutures.

Section IX.—Of Laceration of the Intestine.

Mechanical laceration, or tearing of the bowel, may involve either its inner lining only, or its entire structure. The mucous membrane alone may be lacerated, or the bowel may be torn through.

The first case may arise from hard fæcal matter passing, or from the forcible introduction of a foreign body. If the patient is kept at rest a few days, and upon a restricted diet, and the bowel washed out by emollient clysters, the lesion is quickly repaired, and the part heals. If neglected, such a lesion becomes the troublesome complaint which has been already described as a fissure or superficial ulcer of the rectum.

Laceration of the entire structure of the intestine may take place either at the orifice, not involving a complete division of the sphincter, or it may include the whole breadth of the sphincter, or, leaving this muscle untouched, it may perforate the intestine above. These injuries are of more frequent occurrence in women than in men, and are in the former of much more consequence. In the latter, they are simple wounds, which heal more or less readily, being attended in different cases with more or less local inflammation, and the like. In

women, these injuries acquire their serious character from threatening to establish permanent communication between the intestine and the vagina.

The two first lesions are liable to take place in labour, when the descent of the child is more rapid than the dilatation of the external parts.

If the laceration, though complete, is superficial only, and does not include all the fibres of the sphincter, the lesion is of little consequence; the state of the patient ensures the observance of all the conditions necessary for its reparation. These are rest in the recumbent posture, and frequent ablution with warm water. The superficial rent quickly re-unites by granulation.

When the laceration extends through the sphincter-muscle, so as entirely to divide it, a serious evil naturally follows. The tone of the muscle draws asunder the edges of the rent, which thus are prevented re-uniting: in this state they cicatrize separately, leaving a communication of an inch to an inch and a half in depth; and the power of retaining the contents of the bowel is lost. Fortunately there are modes both of preventing this ill consequence of the accident, and of repairing it when established.

When the laceration is quite recent, that is to say, when two or three days only have elapsed from the confinement of the patient, the following

practice is to be adopted. The sphincter-muscle is to be divided in one or two places, that is to say, on one or both sides of the anus. By this means, the lateral strain or traction upon the rent of communication between the intestine and vagina is done away with, and there is no impediment to its re-union by granulation. But it is necessary to keep the edges of the rent in a wholesome state by frequent bathing with tepid water, to prevent their cicatrizing separately by daily touching the edges with lunar caustic, and to prevent the lateral sections of the sphincter from closing too soon by means of pledgets of lint introduced into, and retained in them constantly. A patient on whom I performed this operation eight days after laceration of the sphincter in labour, had entirely recovered in five weeks; the original rent first healing, and then the artificial divisions being allowed to close. By the same time the retaining power of the sphincter was perfect. This patient has subsequently borne two children, without again suffering rupture of the sphincter. This practice was originally used by Mr. Copeland in cases of recent laceration of the sphincter. It had previously been used by Dieffenbach as a part of the more elaborate operation requisite when the communication is of long standing. In recent cases, however, Dieffenbach himself does not employ it, but contents himself with sutures alone, which, in the relaxed state

of the parts following labour, are generally successful.

When the edges of a laceration through the sphincter have cicatrized without uniting, the means of remedying the defect consist in paring off the edges, and keeping the new surfaces in apposition by means of sutures. It is to render their adhesion surer that Dieffenbach introduced the lateral section of the sphincter into the present operation. The necessity of using it here is, however, very doubtful, and many cases have done well in which it has not been employed. The secret of the success of the operation is the management of the patient before and after it. For several days consecutively aperient medicine should have been given, so as to leave an artificial costiveness for the period necessary for the adhesion to be completed. Or without this condition is rigorously maintained, the operation, however skilfully performed, will probably fail, the part being forced open when fæces pass.

The mechanical elements of the operation are, first, providing as large an extent of surface of adhesion as possible by making the sections oblique, and extending them through part of the skin immediately adjacent; secondly, the use of two sets of sutures, one for the mucous membrane of the rectum, the other for the mucous membrane of the vagina: the former are of course to be first intro-

duced and tied, the latter afterwards. The former may be allowed to separate of themselves into the rectum; the latter may be easily removed on the fourth, fifth, or sixth day, according to the degree of adhesion, or otherwise. Thirdly, keeping the bowels undisturbed for five, six, or eight days after the operation. This may be accomplished by previous purging, by subsequent spare diet, and if fæces still accumulate, by breaking the accumulation down and washing it out, through an elastic catheter introduced through the sphincter.

One source of failure against which the surgeon cannot entirely guard is the supervention of inflammation. But some security on this score may be obtained by delaying the operation till the patient's health is in the best order, either through diet and medicine, or temporary change of air, and the like. Likewise by noting the present influence of the weather as it is observable in the wards of hospitals; for it is certain there are some seasons in which the state of the atmosphere strongly disposes to erysipelas. These times are commonly the setting-in of damp weather. It is desirable, for the same purpose, that the patient should not reside at the time in the middle of a large town, but live in purer air in the suburb.

These precautions are less essential in other operations in which the result is not commonly influenced to a serious extent by the supervention of

slight inflammation, which here is fatal to success. Nevertheless, there is still a hope; the operation which has failed once through these causes may be successful when repeated.

Laceration of all the coats of the intestine above the sphincter has sometimes been produced by the passage of hardened fæces. Dr. Langmore told me an instance (the patient afterwards was under our care for cancer of the breast,) in which such a communication had been so produced. A lady, aged 40, naturally of a constipated habit, and at the time being on a journey, on striving to relieve the bowels, which had not acted for many hours, felt something give way, and the following morning some fæces passed *per vaginam*. On examination, a transverse rent was found within the sphincter, sufficiently large to admit the end of the finger. The only treatment adopted in this case consisted in frequently cleansing the part by injections of warm water, and regulating the state of the bowels by proper medicines. In five weeks, the fæces had ceased to pass through the communication, which had closed permanently.

When such an aperture appears losing its disposition to contract, its closure may be promoted by occasionally touching the edge with nitrate of silver. If these means fail, the suture may be resorted to, the precautions already explained being observed.

The most severe case of this kind of laceration which I have witnessed occurred in an elderly lady, who had been seriously injured some weeks before by the pipe of a syringe improperly used. The rectum had been torn about two inches from the orifice, and had partly sloughed into the vagina; at the same time, there was a large foul cavity higher up between the uterus and the intestine, from which a discharge of matter, and blood, and the contents of the bowel, flowed *per vaginam*. This lady's health appeared to be giving way under the spread of this foul and confined abscess, for the relief of which it was necessary to divide the sphincter, and to lay the lower part of the bowel open into the vagina. She then recovered her health; but the communication remains, which will admit, however, of being closed by the suture.

Section X.—Abscess and Fistula.

Abscesses frequently form in the neighbourhood of the rectum. Some may be considered as accidental, and are out of the scope of my present remarks. These are, first, abscesses from foreign bodies, as a fish-bone, an apple-core, or the like, being impacted in the gut immediately above the sphincter. When the presence of such a substance has been ascertained by examination, it has of course to be extracted; when its removal either

is followed by the immediate healing of the abscess, or the latter takes one of the characters presently to be described. A second form of accidental abscess at this part is, suppuration taking place in piles; this occurrence has been already noticed as a favourable event. A third kind is the descent and pointing of psoas abscess by the side of the anus; this case, which it would be out of place to consider here, requires to be treated on those common principles which regulate surgical practice in all cases of chronic scrofulous abscess.

Independently of these accidental cases, however, there is a strong disposition to form abscess about the anus, attributable to the local causes already explained; namely, the dependent situation of the part, and the pressure of the column of venous blood, to which may be added the want of support to the vessels of the part resulting from the laxness of the surrounding tissue. Or, as it is certain that many abscesses are often critical; that a feverish condition of the habit, or a gross and overloaded state of the body, or an impoverished state of the blood, will rather lead to the formation of matter in one part or other; so the circumstances above pointed out render the rectum particularly liable to be their seat.

Abscesses about the rectum are of two sorts; one of which may be termed diffused; the other circumscribed. The former, deep-seated at their

commencement, gradually work their way downward, and end in completely isolating the rectum behind and laterally, which lies in a great bag of matter. The latter are small gatherings in a mass of hardened tissue, from the size of a pea to that of a chestnut, on one or other aspect of the bowel, and close to the anus. The former are often attended with great constitutional disturbance, which disappears as soon as they are opened; the latter unattended by serious symptoms at their origin, end by giving rise to a very troublesome local disease, which will be presently considered.

The formation of deep-seated abscess upon the intestine is usually preceded by shivering and fever, furred tongue, pain in the back and head, sometimes delirium. It often happens that there is very trifling uneasiness about the rectum, the only local symptom being irritation of the bladder; the real nature of the disease is thus liable to escape observation for several days, till being suspected, it is at length ascertained by examining the perinæum and rectum.

Part of the treatment of this complaint proceeds on common principles; rest in the recumbent posture, abstinence, and saline aperients, with leeches locally applied, will mitigate all the symptoms. But that from which the greatest relief is to be obtained is the early opening of the abscess, into which a lancet should be introduced as soon as the

touch detects any evidence that suppuration is commencing, or a tolerable presumption can be arrived at that the inflammation is pointing. There is another rule respecting such abscesses; when they have matured, and, as then commonly happens, enclose and isolate the rectum in a bag of matter, it is necessary of course to give the freest escape to the matter; but this is to be obtained not by a large incision, but by two or three punctures of the breadth of a lancet-blade on different sides of the anus. So treated, they speedily contract and heal.

Smaller circumscribed abscesses perpetually form in the neighbourhood of the anus. These are sometimes not felt, and their bursting externally, or inwards, makes them first known. Commonly, however, they are attended with local heat, pain, swelling, redness. Cooling medicine, moderation in diet, leeches, and cold applications, occasionally disperse such gatherings, but in most instances they suppurate; and it is important to open them, and that freely, as soon as fluid can be detected in them. By this means a very troublesome complaint may be avoided.

If these abscesses are not opened early, when opened, they do not heal, but contract to a certain extent only, leaving a tubular canal, just large enough to admit a probe, which has no disposition to close, and continues exuding purulent fluid.

Such a canal, or *fistula*, presents three varieties;

it may have one opening alone, and that by the side of the anus, or its one opening may be into the bowel; or it may open both externally and internally, and allow fæcal matter to escape by it.

There is one common plan of treatment, under which each of these kinds of fistula occasionally heal. That is, the use of medicine to prevent costiveness, and the application of local stimulants;—for the latter purpose, bathing with alum-water, and Ward's paste taken as already recommended.

But generally these means fail, and it becomes requisite to have recourse to a surgical operation. This is often of a very simple description.

If the fistula has two openings, a probe-pointed bistoury is passed from the outer opening into the intestine, and being there received upon the fore-finger of the left hand, is drawn out, dividing the intervening thickness. The wound is made to heal by granulation from the bottom, through the introduction of a single layer of lint, replaced as often as it is necessary.

If the fistula has an external opening only, the same operation is requisite, the end of the bistoury being made to perforate the intestine opposite the end of the sinus.

If the fistula has an internal opening only (when it is often most difficult of detection, soreness only, and occasional pain and slight discharge of matter, indicating it,) a parallel, but slighter operation is to be performed, the bistoury being passed into the

sinus from within, and the lining of the bowel being thence divided to the sphincter.

Sometimes it happens that the wound thus made is slow to heal: in that case stimulant applications are to be used locally, and tonic medicines, a liberal diet, and change of air, are to be resorted to, to recruit the patient's strength.

Sometimes it happens that fistulæ, which communicate at one or more points with the intestine, burrow further as blind sinuses in one or more directions. In general it is sufficient to lay these open as far as they run beneath the skin, or to their communications with the intestine. At all events, when they extend deep, this should be first tried, though it may afterwards prove requisite to lay them open to their extreme depth.

Fistulæ often occur in persons of undermined constitution,—with disease of the lungs, or liver, and broken health. In such persons, an operation is not to be recommended; as it would only give gratuitous pain, with no reasonable chance of curing the malady.

Section XI.—Cancer of the Rectum.

For this head, and to form the concluding section of this treatise, I have reserved the consideration of a variety of cases, which, differing among themselves in several pathological features, yet agree in their symptoms, in their fatal course, in the treatment which they require.

Anatomically, likewise, they so far agree, that they all consist in a local change of structure, in which the natural texture becomes more or less gristly, the lining membrane absorbed or ulcerated, and the passage through the intestine narrowed.

Anatomically they differ in this respect; the thickness of the coats of the intestine in one form remains the same; the part is only a contracted gristly tube: in the other forms the diseased part displays increased growth with characters which are familiar to the scientific surgeon, under the names of carcinoma, medullary carcinoma, gelatiniform sarcoma, melanoma.

Diseases of the rectum are more frequent in women than in men,—a difference, the general causes of which are to be sought in the varying conditions of the uterus and in the shape of the female pelvis. The womb during its enlargement in pregnancy interrupts the free return of blood by the hemorrhoidal veins, and mechanically obstructs the action of the bowels. In the unimpregnated state, the periodical congestion of the same organ cannot fail of extending its influence to the vessels of the rectum. The straightness of the sacrum, again, in women, and the general expansion of the pelvic bones at the inferior outlet, deprive the lower part of the bowel of that pressure and support which appear to conduce to the healthy state of the viscera. Something, too

is doubtless to be attributed to the less regular relief of the bowels and of the bladder, and their frequent over-distension, which result from the natural, but in this instance, prejudicial delicacy of women. But the comparative frequency of cancer of the rectum in women depends upon the co-operation of another and a more serious cause, which is the prevalence in women of the cancerous diathesis.

Of the different forms of the disease, that in which there is no thickening is again by far the most frequent kind in women. That, at least, is the result of my own experience of this complaint, which, owing to the cancer-wards established in the Middlesex Hospital, has not been inconsiderable.

The symptoms of cancer of the rectum, slow in their early progress, and hardly observed at first, are at length developed into local pain, sometimes of a dull aching character, at other times acute and lancinating, with a sense of weight and confinement in the part, numbness and uneasiness extending round the loins to the pubes, numbness in the hips and thighs. These sensations are aggravated upon walking, standing, or sitting, and are mitigated by the recumbent posture. The act of evacuating the bowels increases the pain and distress. The fæces are either liquid, or are passed in small fragments and by repeated efforts: blood, matter, mucus, are expelled with them. The patient, if a female,

suffers, in addition, bearing-down of the womb, irritation of the bladder, pain in making water, incontinence of urine. The difficulty and occasional obstruction of the passage of fæces produce fits of distension and of general pain and tenderness of the abdomen, accompanied with hiccup and vomiting.

The situation of cancer of the rectum depends, in some degree, upon its kind.

That which is without thickening generally commences half an inch or an inch within the anus, and from this point occupies from two or three inches to thirteen or fourteen. Sometimes, but very rarely, the hardness and ulceration commence quite at the orifice.

Cancer with thickening is commonly situated two or three inches from the anus; or here is the lower edge of the mass of disease, which may thence extend to two, three, or five or six inches of the intestine; generally it occupies about three or four inches of the bowel, and involves its entire circumference. Sometimes even to the close it is much more circumscribed, and occupies a small part only of one side of the bowel.

The severity of suffering in cancer of the rectum bears no proportion to the quantity of bowel implicated in it. There are two ways in which the disease proves fatal. In general the patient consumes gradually, worn out by long-continued suf-

fering. In other instances the disease produces complete obstruction of the bowels, and the patient perishes more quickly. This form of the malady is attended with the severest distress. Complete obstruction of the bowels rarely occurs except in cases where there is a large mass of gristly substance in the intestine. But I have known the disease terminate in fatal obstruction, and with the most aggravated suffering, when the mass occupied no more than the last three inches of the rectum.

The treatment to be pursued in carcinoma of the rectum is the following.

The pain is to be allayed by opiates. Solid opium, laudanum, the acetate and muriate of morphia, the extract of stramonium, are each in their turn available. Opiates act more promptly and efficaciously in this disease when taken into the stomach, than when applied in injections or as suppositories. If administered in the latter form, the subacetate of lead may be advantageously combined with them.

The bowels in the early stages of the complaint should be regularly relieved. In general a drachm of the lenitive electuary taken over-night, with an injection of tepid water the following morning, will be sufficient for this purpose. A few drops of laudanum may be taken, if necessary, immediately after the action of the bowels.

The canal of the bowel is to be dilated with a

bougie, if it is so narrowed by the disease as to obstruct materially the passage of the fæces.

Towards the fatal period of the worst cases, when the canal is much obstructed, it is sometimes found of great relief to introduce a long flexible tube past the cancer, and by its means to break down, softening at the same time by water injected through it, the fæces that have accumulated above.

It sometimes happens that the disease is situated at the orifice of the intestine. In this case it admits of removal by a surgical operation. I have performed this operation three times. In one, in which I removed nearly two inches of the rectum, the patient lived two years, and died of an illness not directly connected with the original disease, which had, however, re-appeared. In the second, the patient did not recover from the operation, but died in about five weeks. In the third, in which the ulcerative disease did not occupy more than a square inch of one side of the extremity of the intestine, the patient recovered, and continues in good health at the present time.

Cancer of the rectum occasionally assumes the character of polypus; and a pendulous growth is forced down whenever the bowels act. Such a tumour has no sensibility, and had better be removed by ligature. In a case of this kind, which was under my care some years ago, the polypus

was thus taken away very much to the comfort of the patient. The pendulous growth was not reproduced, but a mass of indurated substance formed upon the fore-part of the bowel within the anus. Part of this I likewise removed by ligature, but the fungus again increased, and the complaint ended fatally.

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